

U.S. Department of Energy



ORDER

WAPA O 440.1
Formerly WAPA 3790.1B

DATE: 11-18-02

SUBJECT: OCCUPATIONAL SAFETY AND HEALTH PROGRAM

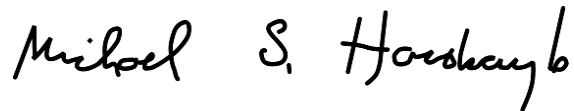
1. OBJECTIVE. To establish the policy for implementation and administration of the Occupational Safety and Health (OS&H) Program for the Western Area Power Administration (Western) consistent with best industry practices and applicable rules and regulations.
2. CANCELLATION. WAPA 3790.1B, Occupational Safety and Health Program, 10-05-98.
3. APPLICABILITY. This Order applies to all Western activities and contractors performing work for Western as provided by law and/or contract and as implemented by the appropriate Contracting Officer.
 - a. Contractors. The Contractor Requirements Document (CRD), Attachment 1, sets forth intended requirements to be applied to contractors awarded contracts for performing work for Western, primarily on Western-owned and -leased facilities. Compliance with the CRD will be required to the extent set forth in a contract.
 - b. In instances where Western and non-Western standards are applicable and there are conflicts between such standards, the standards providing the greater protection shall govern.
4. POLICY.
 - a. Western shall conduct operations in a manner that provides a safe and healthy work environment for employees and contractors while protecting the public, property, and the environment. Safety must be an integral element in every work procedure. All employees must be committed to the following:
 - (1) No employee or contractor should, under any circumstances or to any extent, set aside safety procedures or common sense for personal convenience or to meet a project schedule.

- (2) Employees and contractors must understand and act according to their right and responsibility to identify and take action to reduce and eliminate hazardous work environments and work practices.
 - (3) Managers and supervisors must lead by example and ensure that each job is accomplished in a safe and healthy manner.
 - b. Without fear of retaliation, an employee has the right and responsibility not to participate in an activity or action he/she deems to be unsafe. Additionally, an employee has the right and responsibility to stop any operation he/she believes would place a person in imminent danger.
 - c. Without fear of retaliation, employees are encouraged to report near-miss incidents. Reporting a near miss may prevent injury to other employees or prevent damage to equipment.
 - d. No employee will be subject to restraint, interference, coercion, reprisal, or other discrimination by virtue of participation in the OS&H program. This includes filing a report of an unsafe or unhealthy working condition or exercising the rights afforded by Federal laws or Executive Order. An employee or employee's representative who believes that an act of reprisal or discrimination has been committed may file a complaint under the grievance procedures described in Department of Energy (DOE) O 442.1A, Department of Energy Employee Concerns Program, or under an applicable negotiated grievance procedure.
5. RESPONSIBILITIES. Additional responsibilities are found in the Chapters of this Order.
- a. Administrator (A0000).
 - (1) Establishes and maintains the OS&H program.
 - (2) Provides resources necessary to execute the program.
 - (3) Assigns OS&H performance requirements to all managers.
 - b. Chief Operating Officer (COO)(A7000).
 - (1) Administers the OS&H program.
 - (2) Recommends and coordinates Western-wide implementation of OS&H policy.

- c. CSO Safety and Security Manager (A7700).
 - (1) Ensures implementation of OS&H program.
 - (2) Manages program resources.
 - (3) Coordinates OS&H program in response to departmental issues.
 - (4) Evaluates line organizations to ensure compliance with program standards and procedures.
 - (5) Maintains expertise in safety and health technical areas.
 - (6) Administers WAPA O 340.1, Employee Occupational Medical Program.
 - (7) Reviews unique requisitions/purchase requests with safety or health significance.
- d. General Counsel. Provides advice regarding loss prevention policy, tort claim responsibility, and legal liability.
- e. Procurement Manager. Ensures procurement actions related to safety and health are coordinated with the Corporate Services Office (CSO) Safety and Security Office; i.e., purchases involving chemicals, equipment, and those having ergonomic implication, etc.
- f. Regional Managers.
 - (1) Administer and maintain Western's OS&H program.
 - (2) Allocate the Region's OS&H program resources.
 - (3) Assign safety performance requirements to all managers.
 - (4) Supplement Western OS&H policy as needed.
- g. Regional Occupational Safety and Health Managers (ROS&HM).
 - (1) Ensure implementation and promotion of Regional OS&H programs.
 - (2) Assist and evaluate line organizations for compliance with program standards and procedures.

- (3) Maintain expertise in OS&H technical areas.
- (4) Review requisitions/purchase requests with OS&H significance.
- h. Maintenance Managers.
 - (1) Notify Safety and Environmental Offices of scheduled work that could impact employee safety or health, i.e., asbestos exposure, and chemical spills.
 - (2) Ensure employees have received hazard-training specific to exposure.
- i. Managers, Supervisors, Foremen, and Team leads. Also, see Western's Power System Safety Manual, Section 2.
 - (1) Provide leadership by ensuring safety and health considerations are effectively integrated into every task.
 - (2) Identify and correct unsafe or hazardous conditions.
 - (3) Ensure employees are trained and familiar with safe work practices, procedures, and other requirements.
 - (4) Take precautions to protect employees, the public, property, and environment.
 - (5) Ensure all credit card transactions with safety and health relevance are coordinated with the Safety and Security Office.
- j. Employees.
 - (1) Understand safety responsibilities for themselves and others.
 - (2) Follow assigned work procedures to ensure compliance with approved standards and safe handling of equipment and material.
 - (3) Actively participate in training and maintain safety awareness.
 - (4) Report all accidents and incidents to immediate supervisor.
 - (5) Identify and correct unsafe or hazardous conditions. If unable to correct, bring to the attention of an immediate supervisor.
 - (6) Take precautions to protect employees, the public, environment, and property.

6. RECORDS RETENTION. Records of all OS&H program activities shall be maintained in accordance with OSHA, DOE, and Western requirements.
7. CONTACT. Questions concerning this Order should be directed to Safety and Security, (720) 962-7295.

A handwritten signature in black ink that reads "Michael S. Hacskeylo". The signature is written in a cursive, flowing style.

Michael S. Hacskeylo
Administrator

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ACRONYMS

AC - alternating current	kV - kilovolt
AFGE - American Federation of Government Employees	LFL - lower flammable limit
AHJ - authority having jurisdiction	LOTO - lockout/tagout
ANSI - American National Standards Institute	MSDS - Material Safety Data Sheet
ATV - all terrain vehicle	MVSP - Motor Vehicle Safety Program
BBP - bloodborne pathogens	NFPA - National Fire Protection Association
CDL - commercial drivers license	NIOSH - National Institute of Occupational Safety and Health
CFR - Code of Federal Regulations	OPF - Official Personnel Folder
COO - Chief Operating Officer	OS&H - Occupational Safety and Health
COR - Contracting Officer's Representative	OSHA - Occupational Safety and Health Administration
CPR - cardiopulmonary resuscitation	PEL - permissible exposure limits
CSO - Corporate Services Office	PPE - personal protective equipment
CTD - cumulative trauma disorders	RF – Radio frequency
DC - direct current	ROS&HM - Regional Occupational Safety and Health Managers
DOE - Department of Energy	RPP - respiratory protection program
f/cc - fiber per cubic centimeter	SOP - standard operating procedures
GSA - General Services Administration	TWA - time-weighted average
HCP - Hazard Communication Program	V - volt
HCS - Hazard Communication Standard	WAPA - Western Area Power Administration
HEPA - high-efficiency particulate air	
HVAC - heating, ventilation, air conditioning	
IBEW - International Brotherhood of Electrical Workers	
IDLH - immediately dangerous to life or health	
JHA - job hazard analysis	

CHAPTER I

REPORTING UNSAFE OR UNHEALTHFUL WORKING CONDITIONS

1. OBJECTIVE. This chapter establishes procedures for reporting, investigating, and documenting all types of unsafe or unhealthy working conditions. NOTE: Additional reporting procedures as specified in the current WAPA 5500.1, Power System Incident Reporting, remain in effect for the types of incidents identified in that Order. To report personal injury accidents, motor vehicle accidents, or property damage, see Table of Reporting Requirements, Chapter II, page 5.
2. APPLICABILITY. Resolution of unsafe or unhealthy conditions is encouraged informally and at the lowest level feasible. Should no resolution be achieved at the informal level, the following procedures shall be implemented.
3. PROCEDURES.
 - a. Employees.
 - (1) Report all unsafe or unhealthful conditions and incidents orally or in writing to the immediate supervisor or appropriate Western authority.
 - (2) If resolution is unsatisfactory following supervisor's actions, initiate an appeal by using WAPA F 5400.9, Report of Unsafe or Unhealthful Condition, Section A.
 - b. Supervisors.
 - (1) Confirm the validity of the condition reported if the situation permits.
 - (2) Document all oral reports that fall under the WAPA F 5400.9 categories: imminent danger; potentially serious condition; or unsafe or unhealthful condition.
 - (3) In conditions presenting imminent danger:
 - (a) Stop work. Assess or inspect the situation immediately to eliminate employee exposure.
 - (b) Call ROS&HM immediately (if not available, contact the Regional Manager).
 - (c) Work shall not be restarted until imminently dangerous condition is abated.

- (d) Send copy of WAPA F 5400.9 to ROS&HM with a copy to CSO Safety and Security, A7700. Within 15 days of inspection, inform employee of resolution. Post WAPA F 5400.9 near site. If requested, protect the identity of the employee.
- (4) For a potentially serious condition:
 - (a) Call the ROS&HM immediately. If not available, contact the Regional Manager. The situation reported must be inspected or investigated within 3 days.
 - (b) Correct the condition if possible.
 - (c) Send WAPA F 5400.9 to ROS&HM with a copy to CSO Safety and Security, A7700. Within 15 days of inspection, inform the employee of the resolution. Post WAPA F 5400.9 near the site. If requested, protect the identity of the employee.
- (5) For unsafe or unhealthful condition(s):
 - (a) Correct the condition if possible and inform the Regional Manager and ROS&HM of status. Provide copy of report or notify Regional Manager a report has been completed. Unsafe conditions reported must be inspected within 20 days.
 - (b) Send WAPA F 5400.9 to ROS&HM. Within 15-30 workdays of the inspection, inform the employee of resolution and post WAPA F 5400.9 near the site. If requested, protect the identity of the employee.

c. ROS&HMs.

- (1) Keep a log of all reports - WAPA F 5400.9.
- (2) Upon receipt of WAPA F 5400.9, conduct inspection within the following timeframes. However, inspections may not be necessary if, through normal management action and with prompt notification to employees, the condition(s) can be identified and immediately corrected.
 - (a) Imminent danger--immediately.
 - (b) Potentially serious--3 working days.
 - (c) Unsafe or unhealthy conditions--20 working days.

- (3) A written response to WAPA F 5400.9 shall be sent within 15 days, (30 days for health situations) following an inspection to: the employee initiating the report, Regional Manager, and CSO Safety and Security, A7700.
 - (4) If no inspection is conducted, disposition of the report must be sent to the initiating employee within 15 days. If requested, protect identity of the employee.
 - (5) Ensure that follow up and abatement of identified hazards are accomplished.
 - (6) Ensure similar situations do not exist within the Region. Share information if appropriate.
- d. CSO Safety and Security Manager.
- (1) Ensure Regional follow up is accomplished.
 - (2) Maintain agency's log of unsafe or unhealthful reports.
 - (3) Share appropriate information Western-wide.

CHAPTER II

REPORTING REQUIREMENTS AND INVESTIGATION PROCEDURES

1. OBJECTIVE. This chapter establishes accident and incident reporting requirements and uniform investigation criteria, procedures, and report format.
2. POLICY. In accordance with the provisions of DOE G 225, Guide for DOE O 225.1A, Western will test employees for the use of illegal drugs and/or alcohol who are involved in a fatal or potentially serious on-the-job accident or who engage in unsafe, job-related practices that pose a danger to others or the overall operation of Western and whose actions may have contributed to the event. Procedures and collection guidance are found in Draft U.S. Department of Energy Drug Free Workplace Program Drug testing Guide, Chapter V. (Call your Safety or Human Resources Office for a copy of the complete text).
 - a. Investigations are conducted for occurrences of significant severity or impact on Western's operations. The COO may exclude occurrences from investigation, even though covered by this Order. Occurrences requiring formal investigation are serious accidents resulting in personal injury or property damage, or incidents that have a Western-wide implication. Investigations do not include enforcement proceedings, liability determinations, or controlled research--all of which may require supplementary or separate investigations.
 - b. The primary goal of an accident investigation is to prevent similar occurrences and improve the safety of all operations.
 - c. Near-Miss Program. All employees are encouraged to share near-miss experiences with fellow employees. A near-miss is a second chance or a gift that you receive. It is up to the individual who got the second chance to pass along information so everyone can benefit from the experience. All near-miss reports will be posted to the Web as anonymous and will be posted exactly as received with minor editing, if required, to maintain anonymity. A near-miss page is located on CSO Safety's Web site
<http://www.cso.wapa.gov/cpo/3700/nearmiss.htm>.

3. REPORTING CRITERIA

TABLE OF REPORTING REQUIREMENTS			
*NOTIFICATION: All incidents requiring immediate notification must be made to a person using the established reporting chain. After business hours, contact dispatch or use emergency home phone numbers.			
OCCURRENCE	NOTIFICATION*	INVESTIGATION	REPORTING
<u>Injury or Illness</u> --A fatal or imminently fatal injury or illness involving a Western Federal or contract employee or a member of the public due to an occurrence associated with Western activities. Any work related occurrence resulting in the hospitalization of Western Federal or contract employees. Any occurrence resulting in a lost workday case. Any recordable occupational injury or occupational illness.	Phone within 2 hours (720) 962-7292 Cell phone (303) 598-2353 (303) 598-2361 Phone by the next working day (720) 962-7292 (720) 962-7295 Phone by the next working day (720) 962-7292 (720) 962-7295	Type to be determined Type to be determined Type to be determined Supervisors Investigation	Formal report/ WAPA F 5484.1, Individual Accident/ Incident Report Formal report/ WAPA F 5484.1 Formal report/ WAPA F 5484.1 WAPA F 5484.1
<u>Property</u> --Estimated loss or damage to property (Western and non-Western). \$100,000 or more \$5,000 to \$100,000	 Phone within 2 hours (720) 962-7292 (303) 598-2353 Next working day- Regional Safety Manager	Type to be determined	Formal report/ WAPA F 5484.1
<u>Public Interest/Media</u> --Incidents that may receive national or regional attention, especially any that could result in inquiries from the public or media.	Phone within 2 hours (720) 962-7292 (303) 598-2353	Type to be determined	WAPA F 5484.1

TABLE OF REPORTING REQUIREMENTS			
*NOTIFICATION: All incidents requiring immediate notification must be made to a person using the established reporting chain. After business hours, contact dispatch or use emergency home phone numbers.			
OCCURRENCE	NOTIFICATION*	INVESTIGATION	REPORTING
Any occurrence where a press release is made or where information is provided to the news media, other Federal agencies, or State or local authority, either by Western or a Western contractor.	Phone within 2 hours (720) 962-7292 (303) 598-2353		
<p><u>Motor Vehicle</u>--A motor vehicle accident involving a vehicle owned, rented, or leased by the Federal Government (including those obtained from an Interagency Motor Pool); privately owned vehicle (when used to perform official Government business); or rental cars (Hertz, Avis, etc.) which result in damage of \$1,000 or greater.</p> <p>All accidents resulting in personal injury regardless of dollar damage.</p>	<p>Phone Next working day (720) 962-7292 or (720) 962-7295 (303) 598-2353 (303) 598- 2361</p> <p>Phone by the next working day 720) 962-7292 or (720) 962-7295 (303) 598-2353 (303) 598- 2361</p>	Supervisor's Investigation	<p>WAPA F 5484.1</p> <p>WAPA F 5484.1</p>
<p><u>Tire Failure Report</u> Tire failure or blowout of any Western Vehicle (own/leased or POV used for Government business) must be reported.</p>	Phone Regional Safety Offices or (720) 962-7294		
<p><u>RECURRING REPORTS FROM REGIONS</u> Tabulation of work hours, vehicle usage.</p> <p>Annual Summary of Fire Damage</p>	<p><u>REPORT DUE</u> January 20; April 20; July 20; October 20</p> <p>March 1</p>	<p><u>SEND TO</u> CSO Safety and Security</p> <p>CSO Safety and Security</p>	<p><u>REPORTING</u> DOE F 5484Y</p> <p>See DOE M 231.1, Appendix F</p>

4. INVESTIGATION REQUIREMENTS AND PROCEDURES.

- a. Purpose. The purpose of all accident investigations is to prevent similar occurrences and improve the safety of all operations.
- b. Objectives.
 - (1) Avoid the intent to place blame; instead, clarify responsibilities.
 - (2) Investigate and discover all cause-effect relationships.
 - (3) Dispel mysteries associated with the event.
 - (4) Determine the nature of the event and its program impact.
 - (5) Recommend corrective actions to prevent recurrence and improve policies.

5. INVESTIGATION BOARDS.

- a. COO. Upon delegation from DOE, or at his/her discretion and with concurrence of the Administrator, appoints Investigation Boards (Board) of three to five Western employees. For less serious accidents, in addition to Western employees, Western contract employees or other Federal employees may be appointed to a Board. The makeup of the Board must include the following:
 - (1) A chairman, selected from Western's upper management.
 - (2) A union representative, as mandated by contract.
 - (3) A DOE-trained accident investigator.
- b. CSO Safety and Security Manager. Assigns a Safety staff employee to be the liaison for the Board.
- c. Regional Managers. Have the option of appointing a Board for Regional incidents or accidents.
- d. Special Rules:
 - (1) No person within the functional line of responsibility (through CSO) for the activity or person involved in the accident will be appointed to the Board.
 - (2) The Board will work exclusively on the investigation and will assume regular responsibilities upon completion of the report.

- (3) The use of subject matter specialists or consultants is encouraged.

6. PROCEDURES FOR REPORTING.

a. Format. Investigation Board report includes:

- (1) A disclaimer.
- (2) Appointing Official's Statement of Report Acceptance.
- (3) Table of Contents, including list of exhibits, figures, and tables.
- (4) Acronyms.
- (5) Glossary of Technical Terms (if necessary).
- (6) Prologue - Interpretation of Significance.
- (7) Executive Summary.
- (8) Introduction - Scope of Investigation, Description of the Accident, Brief Description of Site, Facility, or Area where the Accident Occurred.
- (9) Facts and Analysis.
- (10) Conclusions and Judgments of Need.
- (11) Minority Report (if necessary).
- (12) Board Signatures.
- (13) Board Members, Advisors, Consultants, and Staff.
- (14) Appendices.

b. Corrective Procedures.

- (1) Immediate Corrective Procedures. A Board may recommend immediate procedures to be taken by Western or Western contractors that are necessary to prevent a recurrence.
- (2) Recommendations of the Board. A Board shall formulate appropriate recommendations for corrective actions to prevent a recurrence of a similar type of event and to correct any system problems that contributed to the occurrence. Recommendations, the investigation report, and a transmittal memorandum shall be sent to the COO.

- (3) Corrective Procedures from the COO. The recommendations of the Board are reviewed by the COO. He/she may include any additional corrective actions that are considered appropriate. A cover memorandum containing all recommendations and transmitting the investigation report will be sent by the Administrator to the DOE Director of Operational Safety.
- c. Reporting Procedures and Deadlines.
 - (1) Investigation Reports.
 - (a) The Board sends the completed report to the COO within the amount of time prescribed by that official. The investigation report includes a memorandum that contains, but is not limited to, the Board's recommendations.
 - (b) The Administrator's transmittal memorandum to the Department should specify recommendations and subsequent corrective actions to be taken as a result of the investigation.
- d. Follow up. CSO Safety and Security is responsible for distributing, monitoring, and tracking implementation of corrective actions.

CHAPTER III

TRAINING, PROGRAM PROMOTION, AND RECOGNITION

1. OBJECTIVE. This chapter establishes requirements and procedures for OS&H training, program promotion, and safe performance recognition. Western educates and trains managers, supervisors, and employees on a recurring basis to prevent injuries, occupational illnesses, and property damage; provide active, recurring program promotion to heighten OS&H awareness; and establish a program to recognize safe work performance.
2. RESPONSIBILITIES.
 - a. Safety and Security Manager.
 - (1) Assists managers in the development of training programs.
 - (2) Oversees and coordinates the safety awareness program, including auditing Regional activities.
 - (3) Develops and coordinates implementation of Western's employee safety recognition program.
3. REQUIREMENTS.
 - a. Training.
 - (1) Each employee shall receive applicable training to accomplish his/her job in a safe manner.
 - (2) New employees will receive a safety orientation within 5 days of employment, and will receive applicable training before being placed in a workplace exposure (for example, hazard communication and bloodborne pathogens).
 - b. Meetings. (Suggested frequency)
 - (1) Safety Committee--Quarterly. Each Region and the CSO shall organize a Safety Committee with an equal number of management and nonmanagement voting members. The Committee shall:
 - (a) Recommend subcommittees to appropriate Manager(s).
 - (b) Advise management regarding the development of accident- and loss-prevention programs.

- (c) Review, analyze, and appraise safety concerns in respective Regions.
- (2) ROS&HMs--Quarterly. It is recommended that meetings be held to discuss safety activities, accident experiences, Western-wide safety concerns, and share information.
- (3) Crew-Level--Weekly. (Construction inspectors attend and participate in contractor's meetings.) Crews shall meet weekly to:
 - (a) Discuss safe work practices for upcoming work; discuss the Power System Safety Manual.
 - (b) Discuss safety and health related topics.
 - (c) Review past week's accident experience and related matters.
 - (d) Share near-miss information.
 - (e) Maintain records of meetings using "Weekly Safety Meeting Report," or equivalent. Distribute and file in accordance with the form or Regional policy.
- (4) Office--Quarterly. It is recommended that office employees (by organization) meet quarterly to discuss general safety concerns; i.e., ergonomic awareness, safety committee projects, Western-wide safety goals, with the intent to elevate safety awareness.

4. EMPLOYEE SAFETY RECOGNITION PROGRAM.

- a. Purpose. The purpose of the employee safety recognition program is to recognize any Western organizational unit or individual that achieves preestablished levels of safety performance.
- b. Recognition System Program Guidelines. The following guidelines are to be considered in developing programs:
 - (1) The recognition system may emphasize group accomplishment. Individual recognition in the form of personal certificates and/or pins noting special safety activities or the accumulated years of safe work or safe driving is appropriate.
 - (2) Employee and management representatives should be involved in the development of recognition systems. Objectives should address specific safety program needs.

- (3) Recognition systems should be structured so all employees can achieve the desired recognition. Avoid systems, which involve competition, such as the "best" crew, office, etc.
- (4) Safe work periods should be structured on the basis of "safe days" so the incentive is not lost because of an accident. The day after an accident is the first day of a new safe period.
- (5) Decisions should be made during program development on how to handle the following types of potential problems:
 - (a) An employee is injured while on loan to another crew. Whichever unit receives credit for an employee's hours worked is charged with the accident.
 - (b) An unsafe act of one group causes injury to an employee of another group.
 - (c) Recognition for part-time employees.
 - (d) Employees transferring in or out just before the award is earned.
 - (e) Recognition systems need to be promoted on a continuing basis. Score boards or monthly flyers that remind the groups how they are doing are very helpful.
 - (f) Recognition should be given in a timely manner.

CHAPTER IV

MANAGEMENT APPRAISAL, INSPECTION, AND CORRECTIVE (ABATEMENT) PROCEDURES

1. OBJECTIVE. This chapter establishes Western's OS&H appraisal and inspection programs, including corrective procedures.
2. POLICY. Western requires an active appraisal, inspection, and corrective (abatement) program that holds each manager and supervisor accountable for safe and healthful work conditions and practices. Specific objectives should measure management performance, recommend corrective actions, and follow up to ensure adequate implementation of Western's OS&H program.
3. RESPONSIBILITIES.
 - a. Chief Operating Officer. Assigns management performance requirements, which:
 - (1) Ensure that in-depth management appraisals (each Region) are conducted at least once every 3 years.
 - (2) Ensure specific program element appraisals (each Region) are conducted once a year on a rotating basis; i.e., first year fire prevention program, next year industrial hygiene, etc. (Schedule of appraisals is due to Regions in November for each calendar year.)
 - (3) Ensure that OS&H appraisals and inspections are done by personnel that are qualified (education and training) in the disciplines being appraised and inspected.
 - b. Regional Managers. Assign management performance requirements in their Region, which:
 - (1) Ensure an OS&H appraisal and inspection program consistent with the scope of this Order.
 - (2) Ensure that qualified OS&H personnel conduct formal inspections of all duty facilities at least yearly, assuring compliance with current OS&H regulations. Assure more frequent inspections where there is an increased risk of accident, injury, or illness. Random inspections shall be scheduled by Safety at a representative number of unmanned sites each year on a 4-year cycle. (The nature of maintenance work requires work crews to repair storm damage and conduct periodic preventative maintenance at isolated work sites. Site visits at these times and places by management and safety representatives are encouraged to promote individual and crew safety.)

- (3) Ensure follow-up inspections are done to determine corrective action has been completed.
 - (4) Authorize the correction of the hazardous condition in imminent danger situations, and the withdrawal of employees who are not necessary for correcting the condition.
 - (5) Ensure that corrective plans for unsafe and unhealthful working conditions are developed.
 - (6) Report details of abatement plans requiring more than 30 working days to complete to the COO.
4. PROCEDURES FOR FORMAL APPRAISALS AND INSPECTIONS. All possible effort will be made to combine inspections so that disruptions to the Regional Office are minimal.
- a. Appraisal Steps.
- (1) Appointment. The COO or the Regional Manager appoints an appraiser(s) representing safety, power operations, maintenance, or other involved functional discipline(s). A representative of the official in charge of a workplace and a representative of employees International Brotherhood of Electrical Workers (IBEW) and/or American Federation of Government Employees (AFGE) shall be given an opportunity to accompany safety and health inspectors during the annual facilities inspection.
 - (2) Initial Meeting. Appraiser(s) meets with the representative(s) of the organization regarding the objective, scope, and duration of the appraisal.
 - (3) Fact Finding. The fact finding process includes the review of records, work procedures, facilities, etc.
 - (4) Exit Briefing. Appraisers meet with representatives of the appraised organization at the conclusion of the appraisal to brief them on findings.
 - (5) Reporting. A report will be prepared at the completion of each appraisal and transmitted within 45 days of the appraisal visit to the head of the appraised organization.
 - (6) Action. The appraised organization shall respond to the appraisal report within 30 days of receipt and indicate what corrective actions have or will be taken and when the actions will be completed.

- (7) Follow up. (Within an appropriate time frame, but no longer than 6 months.) Visits by a representative appointed by the COO may be required for the purpose of discussing the adequacy of corrective actions and the need for additional action. These discussions must be confirmed in writing and, where no additional action is necessary, constitute formal closeout of the appraisal.

CHAPTER V

PERSONAL PROTECTIVE EQUIPMENT

1. OBJECTIVE. This chapter establishes requirements and use of personal protective equipment (PPE).
2. APPLICABILITY. These requirements, which are not all inclusive, are applicable to all Western employees. Supervisors and employees shall review and comply with applicable requirements referenced below. Contractors, not otherwise operating under construction specifications, shall ensure their employees are similarly protected.
3. POLICY. Hazard assessments must be conducted and all hazards must be evaluated. The Safety Office will make a determination of the safest PPE. Western will use engineering and/or management controls to the maximum extent possible to eliminate occupational hazards. PPE must be utilized when such controls are not feasible. Select appropriate PPE to assure proper fit and protection for the employee. Hazard reassessments will be necessary based on the introduction of new or revised processes, introduction of new chemicals into the workplace, new equipment, and/or accident experience to assure the continued suitability of the PPE. PPE shall be in good condition, capable of providing the protective capability required by the standards for the equipment. When not in use, PPE is required by OSHA standards to be stored in a clean and sanitary manner.
 - a. RESPONSIBILITIES.
 - (1) Managers, Supervisors, Foremen, and Team Leads. Evaluate equipment needs and apply the "Table of Requirements for Personal Protective Equipment" at the end of this chapter. Ensure training in proper use and care of equipment.
 - (2) ROS&HMs. Advise and assist managers, supervisors, and employees in the correct evaluation of need, standards, training, and selection and maintenance of equipment.
 - (3) Employees. Use equipment properly and maintain it as required.
 - b. TRAINING.
 - (1) Initial.
 - (a) Employees must be trained: when PPE is necessary; to know what type of PPE is necessary; how to properly don, doff, adjust, and wear

the PPE; limitations of the PPE; proper care, maintenance, useful life, and disposal of the PPE; and additional requirements in accordance with the specific standards.

- (b) An employee must demonstrate an understanding of the training and the ability to use the PPE properly before he/she is placed into a work situation.

(2) Retraining.

- (a) Changes in the workplace render previous training obsolete.
- (b) Changes in the types of PPE render previous training obsolete.
- (c) Observed inadequacies in an employee's knowledge or use of assigned PPE indicate the employee has not retained the requisite understanding or skill.

4. EQUIPMENT USE REQUIREMENTS.

- a. Head Protection. Nonconductive hard hats are required to be worn by all persons exposed to overhead hazards in construction or maintenance activities or at locations where such activities are in progress, except when inside motor vehicles or office and control buildings not under construction. Warehouses with overhead storage that presents a head hazard, all substation yards and storage yards shall be designated hard hat areas and posted as such. Maintenance and construction work inside of buildings may be exempted from these requirements by the office head when determined that no serious head hazards exist. Hard hats will be provided by Western and meet the requirements of the American National Standard Institute, ANSI Z89.1 (1986) or latest standard. Helmets for all terrain vehicles (ATV), snowmobile, and helicopter operations will be provided by Western and meet applicable standards.
- b. Eye Protection. All persons working in or passing through areas where eye hazards exist shall, as a minimum, wear spectacle-type prescription or industrial safety glasses that meet the requirements of ANSI Z87.1. Additional protection for eyes and face (i.e., goggles, side shields, face shields, filter lenses, etc.) is required for more hazardous eye work such as welding, cutting, chipping, grinding, sand blasting, riveting, or handling of chemicals or irritant substances.
- c. Foot Protection. Foot protection will be worn by employees performing, directly supervising, and/or inspecting work activities that involve foot hazards. Protective footwear shall meet ANSI Z41 including the 75-pound impact test.

Specific procedures for accomplishing the requirements of this section and determining eligibility will be developed locally.

d. Conductive Clothing.

- (1) Conductive clothing includes clothing (pants, jackets, shirts), gloves, and footwear designed for use when employees perform work, within the field surrounding high-voltage electrical equipment, and has the primary purpose of maintaining a constant body potential. When properly utilized, this clothing provides a Faraday cage effect and allows nuisance electrical currents to travel through the clothing rather than the employee's body. It can also prevent the body from becoming electrostatically charged and thereby eliminate the nuisance discharges.
- (2) Employees who regularly perform work under these conditions should, as a minimum, wear conductive footwear unless the type of work or another specific procedure eliminates this hazard. Due to specific design characteristics of some equipment and transmission lines, conductive clothing (including footwear) may be indicated at voltages less than 230 kilovolt (kV). Therefore, each office shall define the equipment, job functions, and work procedures where hazards can be alleviated by the use of conductive clothing and establish policies for its use.
- (3) All conductive clothing, including footwear, shall be furnished by Western. Conductive footwear shall be equipped with protective toes and certified by the manufacturer to meet the requirements of ANSI Z41, Type 2, including the 75-pound impact test.

e. Body Protection. Body protection is dictated by the job hazard analysis (JHA) of the task; e.g., chaps and saw resistant boots when using a chainsaw, coveralls/suits for chemical exposures, etc. Great care must be exercised to insure that the wearing of plastic covered or other tightly woven suits does not reduce one hazard but greatly increase the risk of heat related disorders. The use of administrative controls to work in the cool of the day and body cooling devices should be considered. Substitution of safer chemicals if available is recommended.

f. Hand Protection. Gloves such as meat cutter gloves with kevlar encapsulated stainless steel are recommended for handling broken insulators. Chemically protective gloves shall be worn when handling herbicides, solvents, caustics, and other chemicals as specified by the glove manufacturer and/or the Material Safety Data Sheets (MSDS). The manufacturer of the chemical shall be contacted when the MSDS is not specific.

- g. Respiratory Protection. In accordance with Code of Federal Regulations, 29 CFR 1910.134, manufacturer MSDS recommendations, and Western's Respiratory Protection Program (RPP) (see Chapter XVI), respiratory protection shall be provided to and worn by all employees exposed to respiratory hazards.
- h. Ultraviolet, Laser, and Radio Frequency Energy.
 - (1) Elements of the scientific community caution that the ozone protection provided against ultraviolet radiation may be decreasing causing more skin cancer. Careful selection of clothing and use of protective sun block for exposed skin is encouraged.
 - (2) Fiber optics cable, if severed, can expose viewers to laser energy. Precautions such as having the laser energy stopped must be taken before handling the severed cable. Special goggles for laser energy protection must be matched for the power of the laser. A written work procedure for their use approved by the communication departments is recommended. A complete de-energization of the laser energy is the desirable method of working on laser equipment.
 - (3) There are personal protective devices to measure radio frequency (RF) energy on the market. The use of these devices to warn employees of excessive RF energy (perhaps released by damaged equipment) at a communication site is recommended.
- i. Hearing Protection. Hearing protection shall be provided to and worn by all employees exposed to noise in accordance with 29 CFR 1910.95, noise measurements, and Western's Hearing Conservation Program, Chapter XVII.
- j. State of the Art Equipment. All PPE shall be state of the art.
- k. Selection of Products. All chemicals and equipment shall be reviewed to ensure that the least toxic, effective chemical is secured and that hazards presented by equipment are engineered out, if possible, at the factory. PPE will be used only after engineering and administrative controls have been exhausted.
- l. Off-Duty Activities. Employees are encouraged to be comparably protected during off-duty activities. The Safety Office is available to answer questions about proper selection of personal protective equipment for off-the-job tasks.

TABLE OF REQUIREMENTS FOR PERSONAL PROTECTIVE EQUIPMENT
(Western provides equipment as needed)

TYPE OF EQUIPMENT	CONDITION/USE	EVALUATION/APPROVAL/ INSPECTION	STANDARD
1. <u>Protective Headgear</u> (hard hats and helmets)	Designated hard hat areas. --Do not substitute bump caps. --Do not alter by drilling holes, trimming brims, painting, affixing decals, etc. Work in energized facilities; riding snowmobiles and ATV; or flying.	Employees must inspect for proper fit, installation of suspension, cracks, holes, cleanliness to maintain dielectric strength, etc., daily.	ANSI Z89.1
2. <u>Protective Eyewear/Facewear</u>	Designated "eye hazard" area or operation.	Employees may be issued both clear lens and dark lens and/or photo chromic lens, spectacle-type safety glasses. Supervisor certifies employees need based on conditions and prescriptions.	ANSI Z87.1 1910.133(a)(2) Requires side shields - detachable is acceptable.
-- Industrial safety glasses, plain or prescription; flexible fitting plastic goggles.	Duties requiring use of safety glasses in varying light conditions (i.e., indoors, outdoors, night, etc.).		Federal Specification GGG-G-501b Federal Specification GGG-H-171, National Bur. of Standards Circular 471, Spectral Transmission Properties and use of eye protective glasses.
-- Face shield, plastic face shield, metal face shield.	Duties requiring full-face protection. Face shields to be used with goggles/protective glasses.	ROS&HM and/or work supervisor determines need.	
3. <u>Safety Belts, Body Belts, and Life Lines</u>	Use when job or procedures require. PSSM, Section 16.	Issue to individual for their use, care, and maintenance. Employees must maintain and examine before each use.	Follow Manufacturers instructions to maintain, examine, and/or test. (Record test results.)

TABLE OF REQUIREMENTS FOR PERSONAL PROTECTIVE EQUIPMENT
(Western provides equipment as needed)

TYPE OF EQUIPMENT	CONDITION/USE	EVALUATION/APPROVAL/ INSPECTION	STANDARD
4. <u>Vehicle Occupant Restraint System</u> -- Lap belts/shoulder straps, or shoulder harnesses.	Aircraft, motor vehicles, and other special equipment. Used by all operators and passengers.		
5. <u>Protective Footwear</u> (<u>toeguards, instep metatarsal guards, rubber boots, or safety shoes</u>)	Use when foot hazard identified.	Supervisor evaluates work project, work area, and occupation. Inspect annually.	ANSI Z41 or ANSI Z41 classification 75 ANSI Z41.3 Type 2
-- Conductive footwear.	Use where occupation involves barehand (i.e., live-line maintenance, grounded equipment).		ANSI Z41.3 Type 2
-- Rubber footwear.	Use where wet conditions cause hazard(s).	Puncture-resistant arch.	
6. <u>Hearing Protection</u>	Noise hazard areas - working or entering.	Approved by ROS&HM.	OSHA 1910.95
		Medical supervision required to fit preformed ear plugs -- preformed ear plugs must be issued with carrying case.	Follow manufacturer's attenuation curves, noise-level surveys, or octave based analysis.
			DO NOT USE COTTON.
7. <u>Conductive Clothing/ Boots</u>	All employees working barehand, live-line maintenance; static electric potential.	Maintain and care properly to assure protection.	Must meet critical design criteria.
		Replace damaged and worn items immediately.	Refer to manufacturer.

TABLE OF REQUIREMENTS FOR PERSONAL PROTECTIVE EQUIPMENT (Western provides equipment as needed)			
TYPE OF EQUIPMENT	CONDITION/USE	EVALUATION/APPROVAL/ INSPECTION	STANDARD
8. <u>Specialized Protective Clothing</u>	Use for following types of situations: Aviation; chain saw use; welding; handling toxic substances; cryogenics.	Recommend by field office supervisor and ROS&HM. Approved by ROS&HM. Maintain for general use not individual issue.	Must meet critical design criteria. Refer to manufacturer.
9. <u>Respiratory Protection</u>	As required by manufacturers of chemicals as noted on the (MSDS); e.g., pesticides, herbicides, insulating materials, (SF ₆) oils, solvents, etc. Required where there is the potential to exceed the Permissible Exposure Limit (PEL).	Medical examination must confirm that employee can wear a respirator for protection without detriment. Supervisor, with technical support from the ROS&HM, must issue written standard operating procedures (SOP) containing procedures for: (see Chapter XVI) --Selection and issuance of respirators—Fittings, testing, cleaning, disinfecting, storing, inspecting, and repairing respirators. -- Training workers and supervisors. -- Conducting medical evaluation. -- Ensuring quality of compressed air used. ROS&HM and/or work supervisor determines need.	NIOSH ANSI Z88.2 OSHA 1910.134

TABLE OF REQUIREMENTS FOR PERSONAL PROTECTIVE EQUIPMENT (Western provides equipment as needed)			
TYPE OF EQUIPMENT	CONDITION/USE	EVALUATION/APPROVAL/ INSPECTION	STANDARD
10. <u>Other Personal Protective Equipment.</u> -- Protective skin creams. -- Personal flotation devices.	As determined.		Must meet ANSI, US Coast Guard or other certifying sources.

CHAPTER VI

MOTOR VEHICLE SAFETY

SEE DEFINITIONS AT THE END OF THIS CHAPTER

1. OBJECTIVE. This chapter establishes Western's minimum requirements for the safe operation of motor vehicles and licensing of employees.
2. APPLICABILITY. These requirements apply to all organizational elements and includes Federal and contractor employees operating Government, rental, and/or privately owned motor vehicles used on official Western business. NOTE: If more stringent requirements than found in this Order have been established as position qualifications, those requirements shall govern.
3. POLICY. Western requires that employees operate Government motor vehicles in a safe and lawful manner. Vehicles shall be designed and maintained to meet applicable safety standards.

Commercial Motor Vehicles shall be operated in accordance with Federal Motor Carrier Safety Regulations.

4. RESPONSIBILITIES.
 - a. COO through the Safety and Security Manager.
 - (1) Ensures motor vehicle accidents throughout Western are reported as required by this directive.
 - (2) Reviews Western's purchase/lease orders for non-General Services Administration (GSA) motor vehicles to ensure inclusion of appropriate safety features if not reviewed by the RS&SM.
 - b. Regional Managers. Ensure motor vehicle accidents involving employees/property are reported as required by Chapter II of this Order.
 - c. Optional Motor Vehicle Safety Program Coordinators. If a Region chooses to designate a Motor Vehicle Safety Program Coordinator, the following is recommended. All information shall be filed and secured in accordance with the provisions of the Privacy Act of 1974. Information received from the State and/or National Driver Registry shall be forwarded by memorandum to the employee's supervisor for verification and evaluation.

d. RS&SM.

- (1) Provide safety support to Motor Vehicle Safety Program Coordinators, and managers.
- (2) Ensure appropriate training programs are available.
- (3) Review purchase/lease orders for non-GSA motor vehicles to ensure inclusion of appropriate safety features.
- (4) Ensure motor vehicle safety training records are maintained.

e. CSO and Regional Office Property Management Officers.

- (1) If applicable, forward purchase/lease requests for non-GSA vehicles; i.e., off road vehicles, line trucks, construction vehicles, etc., to the appropriate RS&SM for review.
- (2) Recommend proper maintenance, inspection, and service in accordance with the manufacturers recommendations to keep them in safe operating condition.
- (3) Review Regional purchase/lease orders for non-GSA motor vehicles and specialized motor vehicles to ensure inclusion of appropriate safety features.
- (4) Ensure any procured vehicle with a tire-wheel combination rated for an inflation pressure of 50 PSI or greater shall be equipped with metal stems.
- (5) If applicable, maintain records of annually validated State driver's license.

f. Managers, Supervisors, Foremen, Team leads, and Project Managers.

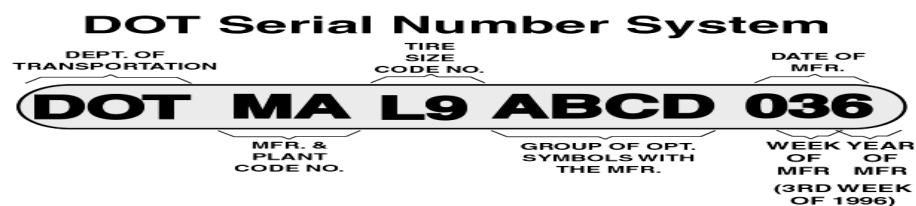
- (1) Determine which employee's will be subject to operating a motor vehicle for Western.
- (2) Examine, at least annually, each employee's State license to ensure it is valid for the type(s) of vehicle to be operated (WAPA F 4400.16# or equivalent).
- (3) When information is received from the State and/or National Driver Registry, verify the information with the employee. Determine the employee's suitability to continue operating a motor vehicle(s) for Western, notify the employee of the recommendation, provide a copy of the information to the employee, and return the transmittal memorandum to the RS&SM.

- (4) Allow only qualified employees to operate motor vehicles. NOTE: The only exception is when an employee is in training and under constant supervision by a qualified operator.
 - (5) Monitor motor vehicle operations and ensure they are performed in a safe and lawful manner.
 - (6) Ensure employees receive appropriate motor vehicle safety training.
 - (7) Request the driving record of any employee who exhibits irrational behavior and/or deteriorated driving skills.
 - (8) National Driver Registry information may be requested in the following situations:
 - (a) When an employee is hired in a position that requires the operations of a motor vehicle on a regular basis.
 - (b) When an existing employee's ability to operate a motor vehicle safely is in question.
 - (c) When the State license is renewed.
 - (9) Maintain a list of all employees and the types of motor vehicles they may operate for Western.
 - (10) Ensure that all defects or deficiencies on vehicle inspection report are corrected before vehicle is operated.
- g. Employees (Government and contract). Employees are subject to operating motor vehicles for Western must:
- (1) Be at least 18 years old before operating a light duty motor vehicle and at least 21 years old before operating a special light- or heavy-duty motor vehicle.
 - (2) Possess a valid State adult license or Commercial Drivers License (CDL) for the type(s) of vehicle(s) to be operated. (This may not be a drive to and from work only permit.)
 - (3) Operate all motor vehicles safely and lawfully.
 - (4) Maintain a valid medical examiner's certification in their possession when operating a Commercial Motor Vehicle (CMV).

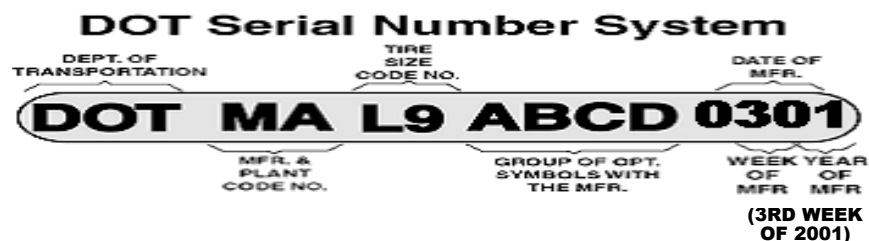
- (5) Notify supervisor and safety manager by the next workday of:
 - (a) Any citation received for a moving violation when operating a motor vehicle for Western.
 - (b) Revocation or suspension of the State license.
 - (6) Report Western-related motor vehicle accidents to supervisor as soon as possible.
 - h. Contractors. Any contract employee authorized to operate Government motor vehicles or equipment for Western shall be monitored by the Contracting Officer and/or a Contracting Officer's Representative (COR) to ensure the following responsibilities are carried out:
 - (1) Ensure that all contract employees authorized to operate Government vehicles comply with the provisions of this Order.
 - (2) Have motor vehicle liability insurance and hold Western and GSA harmless for all damage caused while their employees are operating a Government vehicle.
5. REQUIREMENTS. For all motor vehicles:
- a. Safety Belt Requirements. Each person operating or riding in a Government, rental, or privately owned motor vehicle being used for Western business shall use the installed occupant restraining systems. At a minimum, a lap belt shall be provided for the operator and each passenger seat. Restraining systems shall be kept in good functional repair and not removed or altered.
 - b. Accident/Property Damage. All accidents must be reported to the proper law enforcement agency in accordance with State laws. All motor vehicle accidents with damage shall be reported on WAPA F 5484.1, Individual Accident/Incident Report. Additionally, all motor vehicle accidents should be reported to the local Property Management Officer. Any motor vehicle accident causing a personal injury, regardless of dollar loss, shall be reported to the Safety and Security Office on WAPA F 5484.1
 - c. Employees subject to regularly operating a Government or a commercial motor vehicle for Western.
 - (1) Shall attend a formal defensive driver training program, such as the National Safety Council's Defensive Driving Course, as soon as practical. Refresher training will be provided when deemed appropriate.
 - (2) Vehicle operators shall adhere to tire manufacturers recommended speed limits.

- (3) Use tire pressure gauges that will ensure accurate tire pressure readings are obtained.
 - (4) Install metal valve caps on all tires at 50 PSI or above according to tire manufacturers.
 - (5) Ensure overweight axle conditions do not exist.
 - (6) Report all tire failures to the Regional Safety Office and provide the following information.
 - (a) Date of incident
 - (b) Tire manufacturer
 - (c) Tire size
 - (d) Max load rating
 - (e) Recommended tire pressure
 - (f) Vehicle make
 - (g) Vehicle model
 - (h) Include comments such as front or rear tire.
 - (7) Replace steer axle tires that are older than 5 years on vehicles rated at 26,001 lbs and above.
- d. DOT Code. Marked in the sidewall of the tire is the DOT serial number system. Example: DOT MA L9 ABCD 036). DOT = Department of Transportation, MA = Manufacturer & plant code number, L9 = Tire size code number, ABCD = Group of option symbols with the manufacturer, 036 = First two numbers are the week of manufacture; last number is the year of manufacture. For example, 036 means tire was manufactured the third week of 1996.

**Illustration of DOT Code
Before Year 2000**



**Illustration of DOT Code
After Year 2000**



e. Drivers Inspection.

(1) Before driving a motor vehicle the driver shall:

(a) Be satisfied that the motor vehicle is in safe operating condition.
Check the following:

- 1) Service brakes including trailer brake connections
- 2) Parking (hand) brake
- 3) Steering
- 4) Lights and reflectors
- 5) Tires
- 6) Horn
- 7) Windshield wipers
- 8) Rear vision mirrors
- 9) Coupling devices
- 10) Wheels and Rims
- 11) Emergency equipment

(b) No motor vehicle shall be operated on a tire which has a cold inflation pressure less than specified for the load being carried. Split rims, if a tire is 20% below the recommended PSI, it can not be inflated while on the vehicle.

f. Controlled Substances and Alcohol Testing:

Western will test employee use of controlled substances and alcohol abuse in accordance with:

(1) The provisions of the Federal Motor Carriers Safety Regulations as prescribed by the U.S. Department of Transportation.

(2) The U.S. Department of Energy Drug-free Workplace Program Drug Testing Guide, DOE Order 3792.3.

MOTOR VEHICLE SAFETY DEFINITIONS

Commercial Motor Vehicle (CMV). A motor vehicle or combination of motor vehicles used in commerce to transport passengers or property if the motor vehicle:

- a. Has a gross combination weight (rating) of 26,001 pounds or more inclusive of a towed unit with a gross vehicle weight rating of more than 10,000 pounds. (This is not the actual loaded weight, but the manufactures GVWR.)
- b. Has a gross vehicle weight rating of 26,001 pounds or more.
- c. Is of any size and is used in the transportation of material found hazardous for the purpose of the Hazardous Material Transportation Act and which require the motor vehicle to be placarded under the Hazardous Material Regulations.

Government Motor Vehicle. Government motor vehicle includes any motor vehicle which is:

- a. Owned by Western.
- b. Assigned or dispatched to Western on a rental basis from a GSA interagency motor pool.
- c. Leased by the Government for a period of 30 days or longer from a commercial firm. For the purposes of this Order, motor vehicles include sedans, vans, buses, and trucks.
- d. Privately owned vehicle.
- e. Rental vehicle.

Gross Combination Weight Rating (GCWR). The gross vehicle weight specified by the manufacturer as the loaded weight of a combination vehicle.

Gross Vehicle Weight (GVWR). The gross vehicle weight value specified by the manufacturer.

Medical Examiner's Statement. A signed statement by the examining physician attesting to the employee's physical qualifications under the Department of Transportation Regulations to operate a motor vehicle. The statement shall list restrictions; i.e., must wear corrective lenses and/or hearing aid.

Operator. For the purpose of this Order, an "operator" is an employee who is regularly required to operate motor vehicles.

Privately Owned Vehicle. A motor vehicle owned by the employee and operated on official business for Western.

Rental Vehicle. A motor vehicle rented from a commercial firm for less than 30 days for use on official business for Western.

CHAPTER VII

RADIO FREQUENCY (RF) EXPOSURE

1. OBJECTIVE. This chapter establishes a Radio Frequency (RF) Exposure policy addressing the worker safety issues for RF exposure from RF communication facilities utilizing antenna systems installed on Western towers. It provides guidelines regarding safe working distances from energized antennas and time limits for worker exposure.
2. APPLICABILITY. This policy applies to all Western employees and their supervisors who may be exposed to RF radiation as a consequence of their employment.
3. RESPONSIBILITIES.
 - a. Supervisors, Foremen, Team Leads.
 - (1) Ensure that employees who may be exposed to RF radiation above the general population/uncontrolled exposure limits have been trained, or have specific knowledge such that they are fully aware of the potential for exposure and can exercise control over their exposure.
 - (2) Ensure that employees are not exposed to RF radiation above permissible levels. (see paragraph 4 below)
 - b. Employees.
 - (1) Use the provided RF Exposure Policy in accordance with instructions and training received.
 - c. Regional Safety & Security Manager.
 - (1) Annually reviews all elements of the RF Exposure policy and assures compliance.
 - (2) Reviews training to be provided by Western, or an entity designated by Western, to any employee which may be exposed to RF radiation, at a level above the general population/uncontrolled maximum permissible exposure (MPE) limits, as a consequence of their employment.
 - (3) Reviews submitted hazard analysis, written procedures, and monitors the work environment to determine the need for additional actions.

4. EXPOSURE POLICY.

- a. Engineering reports have been evaluated by Western's Engineering and Safety offices which describe how the American National Standard Institute/Institute of Electrical and Electronic Engineers and National Council on Radiation Protection and measurements standards apply to the types of personal communication services (PCS)/Cellular antennas, the frequency, and the transmit power that may be installed on Western structures. Based on the findings of these reports, the following general criteria are recommended for use in evaluating the RF exposure to workers within a specified distance of an antenna.

These minimum safe working distances (MSWDs) are based upon occupational/controlled exposure limits and only apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

CRITERIA 1: *For work activity that would result in personal exposure exceeding six (6) minutes, the minimum safe working distance (MSWD) for antennas is:*

Directional Panel Antennas

MSWD = 2 feet, unless marked otherwise by appropriate signage.

Omni-directional Whip Antennas

MSWD = 2 feet, unless marked otherwise by appropriate signage.

Microwave Antennas

MSWD = No MSWD is specified unless marked otherwise by appropriate signage.

The MSWD based upon the technical parameters of each antenna will be determined. For those towers with antennas where the MSWD is determined to be greater than 2 feet, warning signs will be posted so as to be visible to a climber or worker from the climbing leg and in the structure near the antenna. The appropriate MSWD shall be clearly marked on each sign.

CRITERIA 2: *Work activity that would normally violate the MSWD's listed above BUT would result in a time-averaged personal exposure less than or equal to six (6) minutes times the maximum permissible exposure (MPE) in any 6-minute period is considered safe and de-energization of the antennas is not required.*

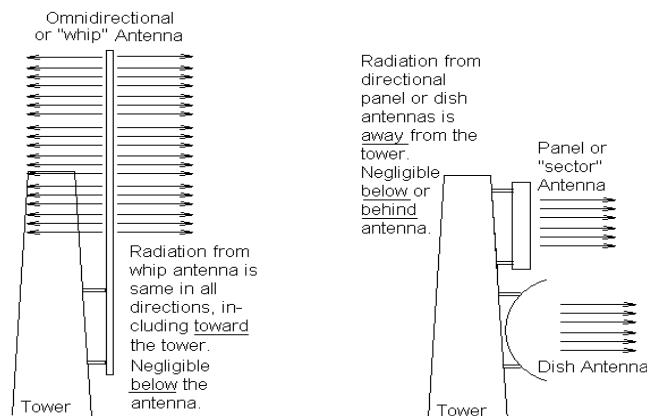
EXAMPLE: A worker climbing past an antenna may move within the MSWD of that antenna in order to get to a work site located outside the MSWD. The worker may

return within the MSWD after remaining well beyond the MSWD, provided that the total time-averaged exposure does not exceed 6 minutes times the MPE in any 6-minute period.

CRITERIA 3: *In situations where a worker must remain within the specified MSWD resulting in a time-averaged exposure which exceeds 6 minutes times the MPE in any 6-minute period, arrangements must be made for the facility operator to de-energize the antennas during the period of worker exposure.*

NOTE: A portable, hand-held personal RF radiation monitor should be used to verify that an antenna has been de-energized prior to entering the MSWD.

CRITERIA 4: *General population/uncontrolled exposure limits will apply to any Western employee which may be exposed to RF radiation as a consequence of their employment but may not be fully aware of the potential for exposure or cannot exercise control over their exposure. Occupational/controlled exposure limits will only apply to those employees who have been trained, or have specific knowledge, such that they are fully aware of the potential for exposure and can exercise control over their exposure.*



ATTACHMENT 1

1. BACKGROUND.

The demand for cellular and personal communication services (PCS) in the United States has been increasing at a phenomenal rate. As this demand for services continues, cellular and PCS providers (system providers) will need to install additional repeater sites to provide additional coverage for their services. System providers are looking for any existing tower/structure that could be used to support their antenna facilities. As Western has many existing communication and transmission towers, several system providers have approached Western for permission to install their antenna facilities on Western towers. As a Federal agency, Western is obligated to provide service providers access to its facilities, as a way of establishing a national wireless communication infrastructure, as long as access to those facilities does not conflict with Western's mission. The Telecommunication Act of 1996 states the following in reference to the availability of Federal property to "duly authorized providers" of telecommunication services:

“The President or his designee shall prescribe procedures by which Federal departments and agencies may make available on a fair, reasonable, and nondiscriminatory basis, property, rights-of-way, and easements under their control for the placement of new telecommunications services. These procedures may establish a presumption that requests for the use of property, rights-of-way, and easements by duly authorized providers should be granted absent unavoidable direct conflict with the department or agency's mission, or the current or planned use of the property, rights-of-way, and easements in question.”

In accordance with the goals of the Telecommunication Act of 1996, Western has entered into Master Lease Agreements with several system providers. The end result of these agreements will be that service providers will be installing their antenna facilities on Western communication and transmission line towers. In addition to the facilities which might be installed on Western's communication and transmission line towers by a system provider, Western also operates and maintains an extensive telecommunication infrastructure for its own operational and maintenance needs.

The purpose of this policy paper is to educate Western employees on the potential hazard posed by these radio frequency (RF) communication facilities, to define policies for working safely in an RF environment, and to define the training that is required for Western personnel who must work in an RF environment. It is Western's chief goal that while granting access to service providers, we continue to provide a safe environment for our workers and the general public.

ATTACHMENT 1

The following guidelines have been adopted by the Federal Communications Commission for RF transmission facilities and are based on national standards developed by the American National Standards Institute (ANSI), the Institute of Electrical & Electronics Engineers (IEEE), and the National Council on Radiation Protection and Measurements (NCRP).

2. THE BIOLOGICAL EFFECTS.

The frequency bands used by both Western and system providers fall in the radio frequency portion of the electromagnetic spectrum. Figure 1 below shows the electromagnetic spectrum.

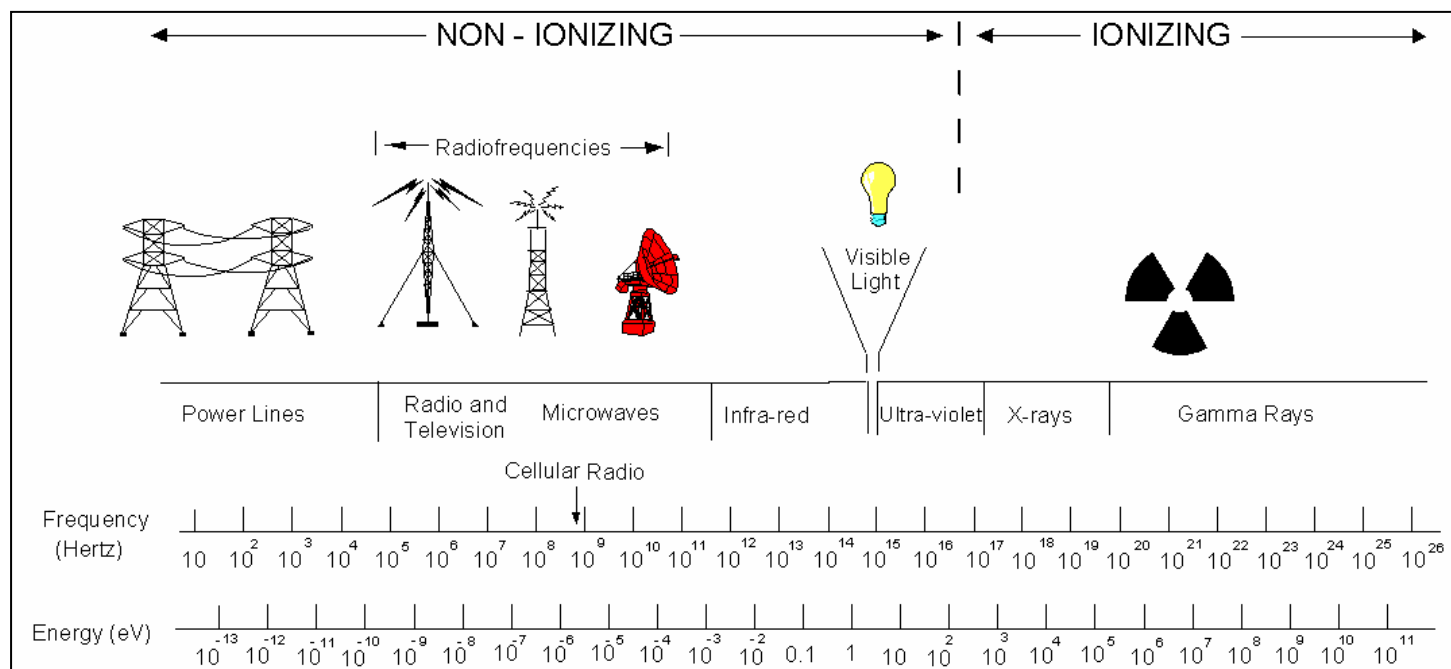


FIGURE 1 - ELECTROMAGNETIC SPECTRUM

As seen from Figure 1, radio frequencies are classified as non-ionizing radiation because of their low energy content. While exposure to ionizing radiation, because of its high-energy content, has the potential to produce molecular changes that can lead to damage in biological tissue, the main effect of exposure to non-ionizing radiation is the generation of heat. The human body can incur tissue damage during exposure to high RF energy if the intensity and duration of that exposure is such that the body is incapable of dissipating the excessive heat generated. The potential for tissue damage depends on the RF power density and frequency, and the duration of exposure.

ATTACHMENT 1

3. ANTENNA DESCRIPTION.

The power density generated by a RF antenna is determined by the transmitter power, the location at which the power density is of interest relative to the antenna and the type of antenna used. Western uses a variety of antenna types in its communication system. Omnidirectional antennas are typically used for VHF mobile system. Omnidirectional antennas are typically used for VHF mobile radio; directional parabolic antennas are typically used for microwave communications (Figure 2). Antennas typically installed by service providers are omnidirectional whip and directional panel type antennas. Omnidirectional antennas, as the name would suggest, radiate equally in all directions horizontally and have negligible fields along the vertical axis above and below the antenna. Directional antennas radiate in a forward direction that is generally outward horizontally away from the tower. There is negligible radiation vertically (above and below the antenna) and toward the rear (tower side of these antennas). The active components of whip and panel antennas are generally enclosed within an insulating material such as fiberglass so there is no danger from accidental contact with active metallic parts. The exposed metallic parts of these antennas considered to be for tower attachment and as such are at ground potential.

Panel antennas used by service providers are usually arranged on each side of a triangular structural-mounting bracket, with 2-4 panels oriented in each of the three directions. Usually 1, but sometimes 2, of these panels for each direction is a transmitting antenna. The others are receiving antennas, which do not generate RF field. A transmitting antenna usually cannot be distinguished from a receiving antenna; hence, all antennas on each side of the triangle should be considered as RF field sources.

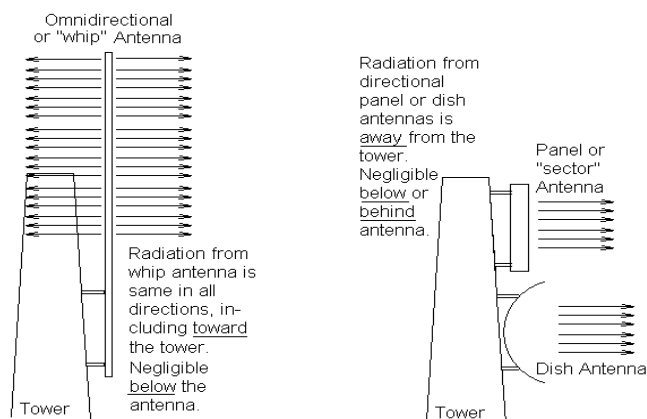


Figure 2 - Typical Antenna Radiation Patterns

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The whip antennas, typically three per wireless service provider of trunked radio services, are connected to transmitters and should all be considered as RF field sources. The whip antennas are usually mounted on the triangular or horizontal structural-mounting bracket mentioned above or via a pipe-mount. Some typical characteristics for various antenna installations are shown in Table 1.

TABLE 1. TYPICAL ANTENNA CHARACTERISTICS			
Use or application	Frequency (MHz)	Antenna Style	RF power, Watts
VHF land-mobile	120-175	Omni. "whip" or pole	10 – 100
UHF mobile or fixed	400-500	Omni. "whip" or pole, Yagi, Corner Reflector, or Parabolic Grid	10 – 50
Cellular and S.M.R.	800-900	Omni. "whip" or pole, Panel antenna	10 - 40, (180 for AT&T)
Paging system	900-1000	Omni "whip" or pole	100 – 500
Point-to-point, or Point-to-multipoint	900-1000	Corner Reflector, or Parabolic Grid	5 or less
PCS	1900-2400	Panel antenna	10 – 20
Microwave	1800-1900	6' to 10' dish	1 – 5
Microwave	6000-10000	6' to 10' dish	1 – 2
Microwave	15000-30000	2' to 4' dish	1 or less

It is important to remember that exposure to RF radiation is additive. A person standing in the middle of several antennas, such as on a rooftop, will be exposed to the RF radiation of each antenna. The exposure from each antenna would be added to determine the overall exposure.

4. RF EXPOSURE LIMITS.

Both ANSI/IEEE and NCRP exposure criteria identify the same threshold at which harmful biological effects may occur. The values for the MPE recommended are based on this threshold level. These exposure limits are based on criteria quantified in terms of Specific Absorption Rate (SAR). SAR is measure of the rate at which the body absorbs RF energy. Both ANSI/IEEE and NCRP exposure criteria are based on a determination that potentially harmful biological effects can occur at a SAR level of 4 W/kg as averaged over the whole body. To that level, a safety factor of ten has been applied resulting in a maximum permissible SAR of 0.4 W/kg. This is the SAR limit for what is termed as controlled/occupational exposure. Both ANSI/IEEE and NCRP recommend two different tiers of exposure limits; one for occupational controlled exposure, and one for general population/uncontrolled exposure. Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can

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exercise control over their exposure. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure. The maximum permissible SAR for this tier is 0.08 W/kg. Based on these SAR limits, the following MPE limits (Table 2) have been derived. These MPE limits are based on the Federal Communication Commission's (FCC) OET Bulletin 65.

TABLE 2. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE		
A. Limits for Occupational/Controlled Exposure		
Frequency Range (MHz)	Power Density (mW/cm ²)	Averaging Time (Min.)
0.3-3.0	100	6
3.0-30	(900/f ²)*	6
30-300	1	6
300-1500	f/300*	6
1500-100,000	5	6
B. Limits for General Population/Uncontrolled Exposure		
Frequency Range (MHz)	Power Density (mW/cm ²)	Averaging Time (Min.)
0.3-1.34	100	30
1.34-30	(180/f ²)*	30
30-300	.2	30
300-1500	f/1500*	30
1500-100,000	1	30

*f = frequency in MHz

You will notice that the MPE limits listed above include an "Averaging Time". Both ANSI/IEEE and NCRP exposure criteria, and most other standards, specify an averaging time for MPE limits. This means that it is permissible to exceed the recommended limits for short periods of time as long as the average exposure (over the appropriate period specified) does not exceed the limit. For example, Table 1 shows that for a frequency of 100 MHz the recommended power density limit is 1 mW/cm² with an averaging time of six minutes (any 6 minute period) for occupational/controlled exposure. For time averaging, the sum of the product(s) of the actual exposure level(s) multiplied by the actual time(s) of exposure must not be greater than the allowed MPE times the specified averaging time. Therefore, for 100 MHz, exposure at 2mW/cm² would be permitted for 3 minutes in any 6-minute period as long as during the remaining 3 minutes the exposure was at 0 mW/cm². Therefore in this example:

$$2\text{mW/cm}^2 \times (3\text{min.}) + (0\text{mW/cm}^2) \times (3\text{min.}) \leq (1 \text{ mW/cm}^2) \times (6 \text{ min.})$$

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It is important to remember that the averaging of exposure is only necessary for situations where temporary exposures might occur that are in excess of the absolute MPE limits. In other words, as long as the absolute MPE limits are not exceeded, indefinite exposure is allowed.

A graphical representation of these MPE limits is shown in Figure 3.

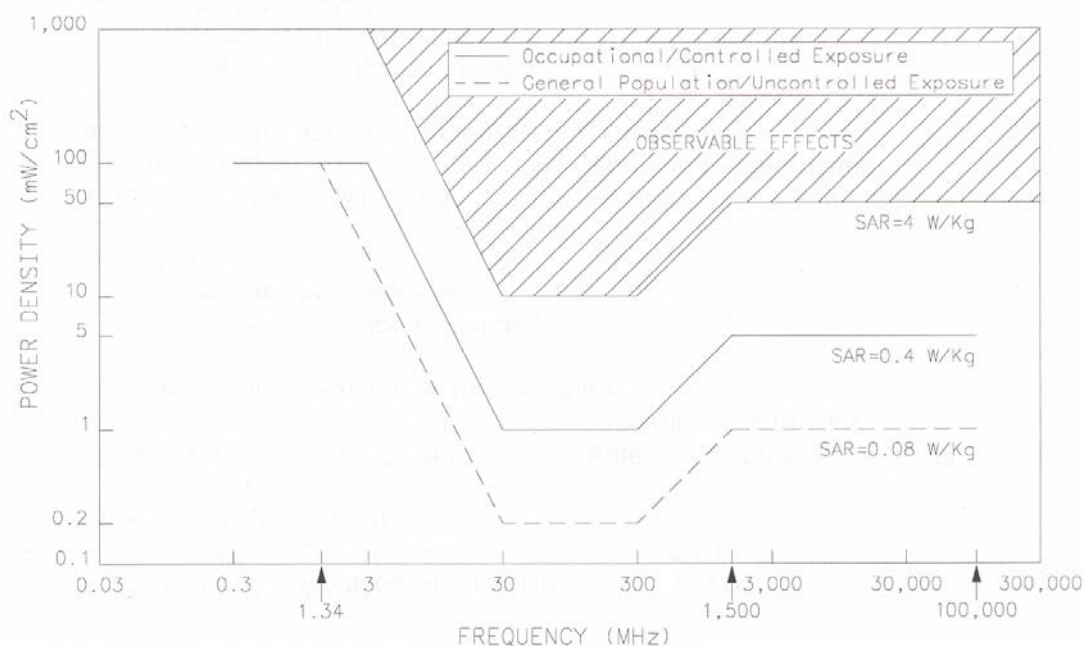


Figure 3- Maximum Permissible Exposure Limits vs. Frequency

It is worth noting here that the MPE limits shown above, which are based FCC OET Bulletin 65 are more conservative than the MPE limits presented in both IEEE Std. C95.1-1999 and OSHA Std. 1910.97. IEEE defines MPE limits from 300-3,000 MHz as $f/3000$ and from 3000-15,000 MHz as $f/1500$ mW/cm², and from 15,000 to 30,000 MHz as 10 mW/cm² for an uncontrolled environment. OSHA sets a single limit (OSHA does not use the 2 tiers for controlled/uncontrolled environments) of 10 mW/cm², for the entire frequency band of 10-100,000 MHz.

5. MINIMUM SAFE WORKING DISTANCES.

VHF Radio Installation: (Omnidirectional "Whip" Antenna)

Frequency (MHz):	170	Antenna Height (Inches):	200
Transmitter Power (W):	125	Antenna Beamwidth (Degrees):	360

On-Axis MSWD (Inches):

Occupational/Controlled:	15.42
General Population/Uncontrolled:	77.09

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UHF Radio Installation: (Omnidirectional "Whip" Antenna)

Frequency (MHz):	450	Antenna Height (Inches):	148
Transmitter Power (W):	50	Antenna Beamwidth (Degrees):	360

On-Axis MSWD (Inches):

Occupational/Controlled:	5.56
General Population/Uncontrolled:	27.78

Paging System: (Omnidirectional "Whip" Antenna)

Frequency (MHz):	930	Antenna Height (Inches):	149
Transmitter Power (W):	500	Antenna Beamwidth (Degrees):	360

On-Axis MSWD (Inches):

Occupational/Controlled:	26.70
General Population/Uncontrolled:	133.52

Cellular Radio Installation: (Directional "Panel" Antenna)

Frequency (MHz):	900	Antenna Height (Inches):	72
Transmitter Power (W):	180	Antenna Beamwidth (Degrees):	45

On-Axis MSWD (Inches):

Occupational/Controlled:	164.46
General Population/Uncontrolled:	822.30

PCS Radio Installation: (Directional "Whip" Antenna)

Frequency (MHz):	1970	Antenna Height(Inches):	51
Transmitter Power (W):	20	Antenna Beamwidth(Degrees):	90

On-Axis MSWD (Inches):

Occupational/Controlled:	7.74
General Population/Uncontrolled:	38.70

Microwave Radio Installation: (Parabolic Antenna)

Frequency (MHz):	7.165	Antenna Diameter(Feet):	6
Transmitter Power (W):	2	Antenna Gain(dBi):	40.3

These are only a few examples and don't cover all the possibilities of antenna type, transmit power, etc. The examples don't touch upon sites where multiple antennas are installed. Service provider installations on Western towers will need to be evaluated on a site-by-site basis.

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6. SUMMARY.

This policy addresses the worker safety issues for RF exposure from RF communication facilities utilizing antenna systems installed on Western towers. It provides guidelines regarding safe working distances from energized antennas and time limits for worker exposure. The Telecommunications Reform Act of 1996 has given authority to the FCC for determining RF exposure standards. The FCC has adopted the ANSI/IEEE and NCRP standards for PCS and Cellular Installations.

CHAPTER VIII

FIRE SAFETY

1. OBJECTIVE. This chapter establishes the minimum requirements for implementation of Western's fire safety program.
2. POLICY. Appropriate measures shall be taken to prevent fires and explosions at Western's facilities and to protect employees, contractors, the public, and Western-owned, -rented, or -leased property from damage. See the Table of Inspection and Test Frequencies on page 44.
3. RESPONSIBILITIES.
 - a. COO through the Safety and Security Manager.
 - (1) Ensures that the requirements of this chapter are fulfilled for CSO elements.
 - (2) Serves as Western's Authority Having Jurisdiction (AHJ), for interpretation of Department of Energy and Occupational Safety and Health Administration, fire, and National Fire Protection Association (NFPA) 101 life safety standards and their application to Western. This includes existing facilities as well as the design of new facilities.
 - (3) Secures appropriate corrective action related to CSO space. With the assistance of the CSO Safety and Security Office, submits specifications to General Services Administration for new or revised space that meets DOE fire safety criteria.
 - b. Regional Managers. Ensures that the requirements of this chapter are fulfilled.
 - c. Construction Project Manager.
 - (1) Ensures that the design of new facilities and major renovations of existing space are in compliance as specified in paragraph 4a below.
 - (2) Consults with the AHJ involving the application of the National Fire Protection Association (NFPA) requirements to Western facilities.
4. REQUIREMENTS.
 - a. The designs for new facilities and plans for the major renovation of existing facilities (both owned and leased) shall be reviewed by a fire protection engineer to ensure compliance with the applicable requirements.

- b. All facilities, fire detection, alarm, and suppression equipment/systems shall be routinely inspected by qualified persons for compliance with appropriate standards at the frequencies listed in the table at the end of this chapter. Deficiencies shall be reported to and promptly corrected by the appropriate manager.
- c. Western's fire safety program shall be evaluated at least every 3 years. This evaluation shall involve the review of selected facilities and activities for compliance with applicable fire safety requirements. The services of a certified fire protection engineer shall be available to Western's staffs for consultation and guidance.
- d. Fires or explosions resulting in property damage (see Chapter II, page 5, Reporting Criteria) or having the potential to cause injury will be investigated with an initial report sent to CSO Safety and Security within 10 workdays following the event.
- e. Each facility occupied by ten or more Western and/or contractor employees shall have a written building emergency plan/fire prevention plan. Evacuation drills shall be conducted at least annually for facilities of 30 or more employees.
- f. The following records shall be maintained:
 - (1) Acceptance test and inspection reports of fire protection systems/equipment as required by applicable NFPA standards.
 - (2) Periodic test and inspection reports of fire protection systems/equipment as required by applicable NFPA standards for the last 12 years.
 - (3) Manufacturer's operating instructions for fire systems.
 - (4) Abatement plans and reports of corrective measures for the last 10 years.
 - (5) Fire/explosion investigation reports.
 - (6) Internal/external fire safety evaluation reports.
 - (7) The resolution of each item listed in inspection and evaluation reports.
 - (8) Requests for variances from DOE requirements and related documentation.
 - (9) Fire risk assessments for each facility.

5. INSPECTION AND TEST FREQUENCIES. The following table presents the frequencies for the inspection of facilities and fire detection and extinguishing equipment/systems to ensure their adequacy to provide both life safety and property protection. These frequencies should be increased if required to ensure a practical level of fire safety in particularly hazardous facilities or activities.

TABLE OF INSPECTION AND TEST FREQUENCIES	
FACILITIES/EQUIPMENT/SYSTEM	FREQUENCY OF INSPECTIONS/TESTS
<u>Facility Inspections:</u> Attended facilities Unattended facilities Proposed lease space Fire doors, dampers, and emergency lights operational tests Battery powered emergency lights	Annually 4 years Prior to lease Annually 30 days
<u>Portable Fire Extinguishers:</u> Visual only in attended facilities Visual only in unattended facilities Hydrostatic test cylinders--pressurized water, CO ₂ , and dry chemical (stainless steel shells) Stored pressure dry chemical (mild steel, brazed brass, or aluminum shells), cartridge operated dry chemical with mild steel shells. (These are to be emptied at least every 6 years for internal inspection.)	Monthly Quarterly Annually 5 years 12 years
<u>Automatic water sprinkler systems:</u> Visual only Operational tests	Quarterly Annually
<u>Non Aqueous fixed extinguishing systems:</u> Visual only Operational tests Weigh compressed gas cylinders Hydrostatically test cylinders	Quarterly Annually Annually 12 years
<u>Fire detection and alarm systems:</u> Visual only Operational tests	Quarterly Annually
<u>Water supply systems:</u> Fire pump operational test Hydrant flow tests	Quarterly Annually
<u>Fire hose:</u> Visual only Hydrostatic test lined hose	Quarterly Annually

CHAPTER IX

CONSTRUCTION SAFETY

1. OBJECTIVE. This chapter establishes minimum safety and health standards to ensure Western's contract construction activities are conducted in a safe and healthful manner.
2. REQUIREMENTS.
 - a. Western's contract construction activities shall be conducted in a manner that provides a safe and healthy work environment for employees while protecting the public, property, and environment.
 - b. Contractors are responsible for developing, implementing, and ensuring compliance with their Western approved safety and health program. See Engineering Manual 6404, Chapter IV - (Attachment 1) and standard subdivision safety paragraph 1.1.3.2 of their construction specifications.
 - c. Promptly following an accident, submit Contractor's Accident Report, WAPA 157-T (Attachment 2), to Western CSO, A7700.
3. RESPONSIBILITIES.
 - a. COO through the Safety and Security Manager:
 - (1) Provide general safety policy and regulatory oversight of specifications.
 - (2) Assist implementation through the development, review, and evaluation of Western's construction program.
 - b. Design Manager. Develop contract specifications that contain appropriate safety language and regulatory requirement to ensure adequacy of safety program management guidelines for construction contractors.
 - c. Maintenance Managers through Construction Managers.
 - (1) Identify responsibilities for developing and promoting Western's construction safety program.
 - (2) Provide policy guidelines for Western's construction safety program implementation.
 - (3) Maintain an interface with Western and contractor construction management that promotes mutual program objectives.

- (4) Monitor and appraises program activities in a manner that ensures construction contractor safety program development and execution.
- (5) Ensure Western construction management employees receive appropriate safety training.

d. ROS&HMs.

- (1) Evaluate the construction safety program and assists in identifying construction safety needs.
- (2) Provide information on advances/changes in safety and health laws, regulations and standards, and Western safety policies and instruction.

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WAPA ENGINEERING MANUAL 6404

CHAPTER IX

SAFETY AND OCCUPATIONAL HEALTH

1. GENERAL. The contractor is required by terms of the contract to operate the job with directed attention to the prevention of accidents. The safety standards which must be applied are contained in the OSHA standards, the contractor's safety and health program, the contract clauses, and the safety provisions of the technical specifications.
2. RESPONSIBILITY. The contractor must be held responsible for conducting a safety and health program in full compliance with the safety standards required by the specifications. This responsibility includes the safety performance of subcontractors and onsite suppliers. Western's onsite representatives are not responsible for directing the contractors safety program, but will monitor the contractor's activities for compliance with the specifications and the contractor's approved safety and health program. Regional Safety staffs are available to assist the construction staff in this aspect of contract administration.
3. GENERAL PROVISIONS.
 - a. A preconstruction meeting shall include a review of the safety performance standards and safety and health requirements applicable to the work under the contract. An onsite safety meeting shall be held prior to start of work, to discuss safety and health requirements and the contractor's approved safety and health program with the contractor's supervisory personnel. Periodic onsite safety meetings of Western and contractors supervisory personnel shall be held to discuss specific work phases and review the contractor's accident experience and compliance with contractual safety and health provisions. Meetings shall be held at least every 3 months and more often as necessary to maintain current status with changing work phases and/or to review the contractor's responsibility for safety program implementation. Monthly meetings may be necessary on large complex projects. Minutes of Joint Policy Safety Meetings held with contractors will be forwarded to the Regional Safety Manager.

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- b. Safety and health requirements are contained in the specifications general paragraphs which pertain to the construction contract activities. Certainly, no single specification can be written which will be perfectly tailored to all jobs. In order to ensure that our demands upon the contractor are reasonable and practical, authority is granted Western's onsite representative to approve adaptations which meet the obvious intent of the requirement and permit the work to proceed safely. In no case can a variance or waiver be granted of an OSHA standard.
- c. Accident prevention must start with the planning of the work and be constantly implemented throughout the progress of the job. In order to be effective, it must be integrated into all work activities and not be considered as something separate and apart. Western requires an approved safety and health program from the contractor prior to the start of jobsite work and insists on the application of the program during the progress of the work.
- d. The Construction Engineer will ensure the staff is safety motivated; and periodic safety meetings are recognized as an effective tool. The Construction Engineer will review staff training needs, recommend and approve programs to meet those identified needs, and evaluate the effectiveness of field office safety and occupational health management programs. Field Engineers and Chief Inspectors will meet with field staff on a near monthly basis in order to maintain work activity coordination and safety awareness.

4. CONTRACTOR'S SAFETY AND HEALTH PROGRAM.

- a. In order to have a high level of quality production and safety and occupational health on the job, the work procedures must be well thought out prior to the start of the job. In this way, obstruction to the orderly progress of the work can be anticipated and controlled or avoided.
- b. Every Western construction contract contains provision for the contractor to have a safety and health program approved prior to commencing work. The program should include procedures and policies that will be implemented to control routine hazards and detailed work procedures that will be utilized to control the hazards peculiar to the work under contract. Each phase of the work should be evaluated separately and safety program supplements developed to maintain current status with the work in progress.
- c. The Construction Engineer shall approve the contractor's safety and occupational health program with the concurrence of the Regional Safety Manager. Construction activities will be divided into three general types: transmission line construction, building construction (including facility and administrative buildings), and new substations and substation additions and

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modifications. Safety and occupational health programs for these construction activities should include as many work operations as applicable.

- d. Effective application of the safety and health program requires a continual follow-up by Western personnel to assure that the contractor is fulfilling the contractual obligations. Inspectors will provide a safety evaluation of the work as one of their primary assignments. This requires each Inspector to acquire a working knowledge of the appropriate safety and occupational health requirements.
- e. Western's onsite representative shall attend all contractor safety meetings, when possible.

5. ACCIDENT REPORTING, INVESTIGATION, AND RECORD KEEPING.

- a. The accident records and reporting requirements in the specifications have been developed to assure that all accidents/incidents are reported, recorded, and investigated in accordance with the most recent WAPA O 440.1, Occupational Safety and Health Program, and WAPA 5500.1, Power System Incident Reporting. It is also intended that all incidents, with the potential for serious injury or damage, be reported regardless of the actual injury that occurs. The only positive value of accidents is the knowledge that can be gained to prevent similar occurrences. Accidents/incidents should be investigated for the primary purpose of maximizing this benefit. Contractors are required by the specifications to report accidents/incidents. When requested, the contractor is also required to participate in accident investigations. Western's onsite representatives, chief inspectors, and field engineers should report any serious or potentially serious accident/incident to the Construction Engineer as soon as reasonable. When the urgency of medical treatment and property protection has passed, immediate action should be implemented to protect the accident scene. The Regional Safety Manager shall be contacted for advice. Less serious incidents should be reported through normal channels but expeditiously so as to permit prompt investigation if deemed necessary.
- b. Accident/Incident Reporting & Investigation.
 - (1) The contractor shall complete WAPA 157-T, Contractor's Accident Report (Chapter IX, Attachment 2), as a minimum and participate in an investigation as deemed appropriate considering the nature of the incident.
 - (2) Completed WAPA 157-T, Contractor's Accident Report, shall be forwarded to the Regional Safety Manager. Accident investigation reports

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shall be submitted to the CSO Safety and Security Office, the Regional Maintenance Office, and the Regional Safety Office.

- (3) The Construction Engineer will maintain records of contractor accident experience and submit the records with the Monthly Construction Progress Report.

6. AUTHORITY.

- a. Under the terms of the contract, Western has full authority to require the contractor to take any steps deemed necessary for maintaining safe operating conditions, including stoppage of work and removal of the superintendent.
- b. When an unsafe condition is discovered, every attempt shall be made to work with the contractor's job superintendent to correct the condition. If the contractor fails or refuses to correct the problem, then a Notice of Unsafe Condition may be issued to the job superintendent by the inspector. A copy of the Notice of Unsafe Condition shall be sent to the contractor's home office by the Contracting Officer's Representative and to the Regional Safety Manager.
- c. If contractor fails or refuses to comply with the safety contractual obligations after all reasonable efforts to gain compliance have failed, the Construction Engineer shall be notified through the Chief Inspector and Field Engineer and will issue an order suspending all or part of the work until satisfactory corrective action has been taken. In the event of the contractor's failure or refusal to correct an unsafe condition in which an injury is imminent, the onsite representative shall direct the contractor to cease such operation until the unsafe situation is corrected. The Construction Engineer may issue an order suspending all or part of the work for repeated failure/refusal to correct unsafe conditions. All suspension orders or work stoppages for safety violations shall be reported to the Regional Maintenance Office, the Regional Safety Office, and the CSO Safety and Security Office. Notification of such action shall be through normal channels.

7. COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

Compliance with Federal, State, and local regulations is required under the terms of the contract. Western's onsite representative will cooperate with all Federal, State, and local agencies having authority for onsite inspections.

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8. OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970.

- a. Compliance with OSHA standards by the contractor is required on Western projects under the construction contract.
- b. Western personnel shall conform to the following policies:
 - (1) Western personnel shall be responsive to the requests of OSHA inspectors and shall accompany them, if agreeable, with both the contractor and the OSHA inspector. Western shall not become involved in discussions between the contractor and OSHA personnel.
 - (2) Western personnel who learn of an impending OSHA inspection must not inform the contractor. Compliance inspections are to be unannounced, with a fine of up to \$1,000 and imprisonment for not more than 6 months for anyone giving advance notice of an inspection.
 - (3) OSHA inspections and pending inspections of Western contractor activities shall be reported to the Regional Safety Manager as soon as practical.

9. REGIONAL OFFICE ASSISTANCE. The Regional Safety Managers are available for field consultations relative to safety matters. Safety engineering service will be provided on request.

10. HAZARDOUS MATERIALS. Many Western construction contracts may contain requirements for work which calls for use of hazardous chemicals. Therefore, the provisions of the contract will require special handling, health awareness, and physical monitoring and tracking by an Industrial Hygienist. These are often unique contacts and will require special considerations individually tailored to the work, the environment, the chemical, the procedures, and the workers. Western's representatives, by their presence, may also be involved in the special considerations personally. It is imperative that the CSO Safety and Security Office and/or the Regional Safety Office be involved in such contracts from the initial inception to contract completion.

WAPA-157-T

Revised 4/30/02

**WESTERN AREA POWER ADMINISTRATION
CONTRACTOR'S ACCIDENT REPORT**
(TO BE SUBMITTED TO WESTERN CSO – A7700
PROMPTLY FOLLOWING THE ACCIDENT)

CONTRACT SPECIFICATIONS (NUMBER AND FEATURE)			DATE OF THIS REPORT
EMPLOYER			
INJURED EMPLOYEE'S NAME		SOCIAL SECURITY NO.	OCCUPATION
AGE	DATE EMPLOYED	DATES OF PREVIOUS INJURIES	
DESCRIBE INJURY 			
DATE OF INJURY	TIME	ATTENDING PHYSICIAN (SEE NOTE)	
STARTED LOSING TIME (SEE NOTE)		DATE OF DEATH	
RETURN TO WORK (DATE) *		CALENDAR DAYS LOST TIME OR SCHEDULED CHARGE (SEE NOTE)	
<i>*ESTIMATE DATE OF RETURN TO DUTY TO AVOID DELAY IN SUBMITTING REPORT</i>			
DESCRIBE ACCIDENT (INCLUDE WHO, WHAT, WHEN, WHERE, AND HOW) 			
SUPERVISORY OPINION	HOW COULD ACCIDENT HAVE BEEN PREVENTED?		
	(Signature) _____ FOREMAN OR IMMEDIATE SUPERVISOR		
PREVENTIVE ACTION TAKEN	ACTION TAKEN TO PREVENT A RECURRENCE		
	(Signature) _____ PROJECT MANAGER OR SUPERINTENDENT		

(NOTE: Lost time injuries to employees must be substantiated by a doctor or physician and should also meet the lost time injury criteria as set forth in ANSI Z16.1, Method of Recording and Measuring Work Injury Experience. Lost time charge for temporary disability is the number of calendar days lost starting with the first scheduled full day or shift lost following the date of injury. Scheduled charges for permanent disabilities are listed in ANSI Z16.1.)

CHAPTER X

ASBESTOS HAZARD ABATEMENT

SEE DEFINITIONS AT THE END OF THIS CHAPTER

1. **OBJECTIVE.** This chapter establishes an asbestos hazard abatement program in compliance with 29 CFR 1926.1101 (construction) and 1910.1001 (general industry), Department of Energy, and other applicable regulatory requirements, and establishes limitations on work that can be performed by Western employees.
2. **APPLICABILITY.** This applies to all construction and maintenance work, including, but not limited to:
 - a. Demolition or salvage of structures where asbestos is present.
 - b. Construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof, that contain asbestos.
 - c. Installation of products containing asbestos.
 - d. Asbestos spill -emergency cleanup.
 - e. Transportation, disposal, storage, or containment of asbestos or products containing asbestos, on the site or location at which construction activities are performed.
3. **POLICY.** Large-scale asbestos removal projects shall be performed by qualified contractors. Western asbestos removal projects shall be limited to activities that may involve removal of asbestos insulated control cable, pulling new conductor over transit cable trays, pipe repair, drilling holes for conduit, etc. Should any of these operations reach or exceed the permissible exposure or excursion limits, 29 CFR 1926.1101(e), Regulated Area, requirements shall be met.
4. **MONITORING.** Determination of employees exposure shall be made from breathing zone air samples that are representative of the 8-hour Time Weighted Average and 30-minute short-term exposures of each employee. Daily monitoring shall be conducted within the regulated area, except when all employees within the area are equipped with supplied-air respirators operated in the positive-pressure mode. If daily monitoring reveals the employees exposures, as indicated by reliable measurement, are below the Permissible Exposure Level, monitoring may be discontinued.

5. REQUIREMENTS. The following critical elements do not represent all of the requirements of the standards. Written procedures required for asbestos work shall document job specific requirements. State or Federal regulations may be more stringent than the following basic requirements. The most stringent regulation shall apply.
 - a. Coordination. The Maintenance office shall notify the Safety and Environmental offices of scheduled work which may involve asbestos exposure so that material testing or atmospheric monitoring can be accomplished. Maintenance shall assure that employees have been made aware of the hazards associated with asbestos exposure.
 - b. Monitoring Requirements. If asbestos containing material must be damaged as part of the work procedure, monitoring procedures shall be conducted by competent personnel both prior to and during work activities to determine airborne concentration levels of friable asbestos. Where monitoring has been conducted and data obtained demonstrating that exposure limits are below PEL, and that the asbestos product cannot release airborne fibers in concentrations exceeding the PEL, Western may rely on such earlier monitoring results to satisfy the requirements of this chapter.
 - (1) Permissible Exposure Level. Western shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter (f/cc) of air as an 8-hour time-weighted average (TWA) as determined by exposure monitoring.
 - (2) Excursion limit. Western shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 f/cc of air as averaged over a sampling period of 30 minutes.
 - (3) Exposure monitoring. Initial monitoring shall be performed to determine airborne concentrations to which employees may be exposed. Daily monitoring shall be conducted within the regulated area, except when all employees within the area are equipped with supplied-air respirators operated in the positive-pressure mode. If daily monitoring reveals that employee exposures, as indicated by reliable measurement, are below the PEL, monitoring may be discontinued.
6. PROCEDURES.
 - a. Work procedures/Wet methods. Insofar as practicable, asbestos shall be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state sufficient to prevent the emission of airborne fibers that could expose employees to levels in excess of the TWA and/or excursion limit.

- b. Communications. On multi employer work sites, an employer performing asbestos work requiring the establishment of a regulated area, shall inform other employers on the site of the nature of Western's work and of the existence of and requirements pertaining to regulated areas.
- c. Regulated areas. Western shall establish a regulated area in work areas where airborne concentrations of asbestos materials exceed or can reasonably be expected to exceed the PEL.
- d. Demarcation. The regulated areas shall be demarcated in a manner that minimizes the number of persons within the area and protects persons outside the area from exposures to airborne concentrations of asbestos. Signs shall be posted at such distance from the location, that an employee may read the signs and take necessary protective steps before entering the area marked by signs. Warning signs shall bear the following information:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING
REQUIRED IN THIS AREA

- e. Labeling. Labels shall be affixed to all products that contain asbestos and to all waste containers containing asbestos. Labels shall be printed in large, bold letters, on a contrasting background and shall bear the following information:

DANGER
CONTAINS ASBESTOS FIBERS
CANCER AND LUNG DISEASE HAZARD

- f. Access. Access to regulated areas shall be limited to authorized persons or to persons authorized by other regulations.
- g. Respirators. During all work where employees are exposed above the TWA or excursion limits, they shall be supplied with a respirator selected in accordance with the requirements of 29 CFR 1926.1101 or 1910.1001.
- h. Prohibited activities. Employees shall not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the regulated area.
- i. Employee training. Training in accordance with the requirements of 29 CFR 1926.1101 and/or 29 CFR 1910.1001, shall be provided for employees exposed to asbestos during work processes and/or exposed to airborne concentrations in excess of the action level and/or excursion limit. Training shall be provided prior to or at the time of initial assignment and at least

annually thereafter. Training records will be maintained for a least 1 year beyond last date of employment.

- j. Medical surveillance. A medical surveillance program shall be instituted covering all employees who for a combined total of 30 or more days per year are engaged in Class I, II, or III work or are exposed at or above the permissible exposure limit or excursion limit, and for employees who wear negative pressure respirators pursuant to the requirements of this section. Medical records shall be maintained for the duration of employment plus 30 years.
 - k. Asbestos work procedures. Asbestos removal, demolition, and renovation operations shall be performed in accordance with the requirements of 29 CFR 1926.1101 and/or 1910.1001 and applicable State regulations.
7. MAINTENANCE PROGRAM. An asbestos maintenance program utilizing competent persons to make decisions shall be initiated in all facilities that have asbestos-containing materials. The program shall include the following elements:
- a. An inventory of all asbestos-containing materials in the facility (all identified asbestos containing materials shall be labeled appropriately).
 - b. Periodic examination of all asbestos-containing materials to detect deterioration.
 - c. Written procedures for handling asbestos materials during renovation activities.
 - d. Written procedures for asbestos disposal.
 - e. Written procedures for dealing with asbestos-related emergencies.
8. TRAINING. A training program shall be provided for employees potentially exposed to airborne concentrations of asbestos in excess of the TWA and/or excursion limit. Employees shall be trained in safe procedures prior to or at the time of initial assignment and at least annually thereafter. As a minimum, such training shall include, but is not limited to:
- a. Information on the health effects associated with asbestos exposure.
 - b. The relationship between smoking and exposure to asbestos producing lung cancer.
 - c. The quantity, location, manner of use, release, and storage of asbestos, and the specific nature of operations which could result in exposure to asbestos.

- d. The engineering controls and work practices associated with the employee's job assignment.
- e. The specific procedures implemented to protect employees from exposure to asbestos, such as appropriate work practices, emergency and clean-up procedures, and personal protective equipment to be used.
- f. The purpose, proper use, and limitations of respirators and protective clothing, if appropriate.
- g. The purpose and a description of the medical surveillance program.
- h. The content of this standard, including appendices.
- i. The names, addresses and phone numbers of public health organizations which provide information, materials, and/or conduct programs concerning smoking cessation.
- j. The requirements for posting signs and affixing labels and the meaning of the required legends for such signs and labels.

ASBESTOS DEFINITIONS

Asbestos--Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered.

Authorized person--Any person authorized by Western and required by work duties to be present in regulated areas.

Competent person--One who is capable of identifying existing asbestos hazards in the workplace, selecting the appropriate control strategy for asbestos exposure, and has the authority to take prompt corrective measures to eliminate them. In addition, for Class I and Class II work, is specially trained to meet the criteria of the Environmental Protection Agency's (EPA) Model Accreditation Plan, 40 CFR 763, for project designers or supervisors (or an equivalent training); and for Class III and Class IV work, is trained in an operations and maintenance course developed by EPA [40 CFR 763.92(a)(2)].

Employee exposure--Exposure to an airborne asbestos would occur if the employee were not using respiratory protective equipment.

Fiber--A particulate form of asbestos 5 micrometers or longer with a length to diameter ratio of at least 3 to 1.

High-Efficiency Particulate Air (HEPA) Filter--A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter or larger.

PEL--The 8-hour Time Weighted Average exposure limit to an airborne hazard; 0.1 f/cc of air is the PEL for asbestos.

Regulated area--An area established by Western to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate. A work area within which airborne concentrations of asbestos exceed or there is a permissible exposure limit.

Time Weighted Average. --The average concentration to which an employee is exposed over an 8-hour workday.

CHAPTER XI

LOCKOUT/TAGOUT

SEE DEFINITIONS AT THE END OF THIS CHAPTER

1. OBJECTIVE.
 - a. This chapter establishes minimum requirements for isolating machinery, equipment, or systems that operate on 600 volts (V) or less, whenever maintenance or servicing is done.
 - b. Ensure that machinery, equipment, or systems are shut down and isolated from potentially hazardous energy sources, and are locked-out and tagged-out (LOTO) prior to servicing or maintenance. LOTO also applies where unexpected energizing or start-up of the machinery, equipment or systems, or release of stored energy could cause injury.
2. POLICY. Western employees must comply with required restrictions and limitations during LOTO periods. Employees observing machinery or equipment that is locked-out and tagged-out for servicing or maintenance shall not attempt to start, energize, or use that machinery or equipment. See paragraph 3f of this chapter for additional requirements when testing energized equipment.
3. LOCKOUT/TAGOUT PROCEDURES.
 - a. Lockout/Tagout procedures apply to:
 - (1) Equipment, electrical circuits, and machinery in manned facilities, shops, and substations with voltage ratings below 600 volts.
 - (2) Construction and contractor activities at Western-owned sites and facilities.
 - b. Lockout/Tagout procedures do not apply to:
 - (1) Equipment, electrical circuits, and machinery with voltage levels below 50 V to ground (if there is no increased exposure to electrical burns or explosions due to electrical arcs).
 - (2) Equipment directly associated with electrical power generation, transmission, and distribution installations with an operating voltage over 600 volts (refer to Chapter 1 of Western's Power System Operations Manual).

- c. Lockout/Tagout sequence. The following steps are required in sequential order:
- (1) Authorized employees shall notify affected individuals or offices that servicing and/or maintenance is required on machinery, equipment, and/or systems, which must be shut down and locked-out before proceeding.
 - (2) The employee shall identify the type and magnitude of energy the machinery or equipment uses, understand the hazards of the energy, and know the methods to control the energy.
 - (3) If the machinery or electrical equipment is operating, or the system is energized, it must be shut down by normal procedures (depress stop button, open switch, close valve, etc.).
 - (4) Energy-isolating device(s) is deactivated or switched-off at the energy source (main breaker, branch breakers, switches, fuses, alternating current (AC) or direct current (DC) distribution panels, main fuse panel, etc.) so the machinery, equipment, or electrical equipment is completely isolated from the energy source(s).
 - (5) Stored or residual energy in devices (capacitors, inductors, spring-charged equipment, elevated machine members, rotating flywheels, hydraulic systems, air, gas, steam, or water pressure, etc.) must be dissipated or restrained by grounding, repositioning, blocking, bleeding down, etc.
 - (6) Energy isolating device(s) is locked-out/tagged-out at the energy source(s) with the employee's assigned lock(s) (AC or DC distribution panels, main fuse panel, main breaker or branch breakers, switches, fuses, etc.)
- d. Verification of isolated equipment. Ensure equipment is isolated from the energy source(s) by:
- (1) Verifying that other personnel will not be exposed.
 - (2) Verifying isolation of equipment by operating the normal operating control(s). The employee shall activate the electrical equipment operating controls, switches, push buttons, etc., and verify the equipment can't be restarted.
 - (3) Returning operating control(s) to "NEUTRAL" or "OFF" position after verifying isolation of equipment.

- (4) Using testing equipment to ensure electrical parts and circuit elements are deenergized.
 - (5) Visually inspect test instruments and equipment for external defects or damage before using to determine whether it is deenergized.
 - (6) Checking test equipment immediately before the test (VOLTAGE TESTING EQUIPMENT MUST BE CAPABLE OF READING "0" VOLTAGE, A "WIGGINS" TYPE VOLTAGE TESTER IS NOT ACCEPTABLE FOR THIS VERIFICATION).
 - (7) The machinery or equipment is now locked-out/tagged-out.
- e. Restoring equipment to service. When servicing or maintenance is completed and the machinery or equipment is ready to be returned to normal operating conditions, the following requirements shall be met in sequence before circuits or equipment are reenergized, even temporarily:
- (1) Conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other devices, such as blocks, wedges, etc., have been removed so the circuits, equipment, or machine can be safely energized or placed in service.
 - (2) The removal of some forms of blocking may require reenergizing of the machine before safe removal.
 - (3) Check work area to ensure that all employees have been safely positioned or removed from the area.
 - (4) Warn potentially exposed employees to stay clear of circuits and equipment prior to reenergizing.
 - (5) Verify, at the equipment, that controls are in the "NEUTRAL" or "OFF" position.
 - (6) Remove the lock and tag at the energy source(s) and proceed to energize the circuit, electrical equipment, or machine at the energy source (main breakers, branch breakers, etc.).
 - (7) Ensure that equipment or machine is functioning satisfactorily.
 - (8) Notify appropriate individuals that the servicing or maintenance is completed and the machine or equipment is ready for use or is in service.

- f. Additional requirements. In situations where lockout or tagout devices must be temporarily removed from the energy isolating device, and the machinery, equipment, or system is energized to test or position the equipment, machine, system, or component thereof, the following sequence of actions shall be followed:
- (1) Clear the machine or equipment of tools and materials in accordance with paragraphs a and b of this chapter.
 - (2) Remove employees from the machine or equipment area in accordance with paragraph b of this chapter.
 - (3) Remove the lockout or tagout devices as specified in paragraph a of this chapter.
 - (4) Energize and proceed with testing or positioning.
 - (5) Deenergize all systems and reapply energy control measures in accordance with paragraphs a and b of this chapter to continue the servicing and/or maintenance.
 - (6) Energized parts – if exposed live parts are not deenergized for reasons of increased or additional hazards or infeasibility, other safety-related work practices shall be used to protect employees exposed to the electrical hazards involved. Such work practices shall protect employees against contact with energized parts directly with any part of their body or indirectly through some other conductive object.
 - (7) Safety-related work practices shall include the use of class "O" rated low voltage insulated tools, insulated blankets, and/or low voltage rubber gloves. A written job hazard analysis is required when energized parts or equipment is worked on.
 - (8) Equipment that has been deenergized but cannot be locked and tagged according to this procedure shall be treated as energized, and safety-related work practices used while working on this equipment.
- g. Application of locks and/or tags. Locks and/or tags shall be placed on each energy isolating device used to deenergize circuits and equipment on which work is performed with the following exceptions:
- (1) Using a lock without a tag. A lock may be placed without a tag only under the following conditions:
 - (a) When only one circuit or piece of equipment is deenergized, with the assigned employee's lock(s).

- (b) When the lockout period does not extend beyond the work shift.
(Employees exposed to the hazards associated with reenergizing the equipment are familiar with this procedure.)
- (2) Using a tag without a lock. If a lock cannot be applied to the equipment or circuit (i.e., the blocking device won't fit; the equipment cannot be made lockable) the following steps shall be accomplished:
 - (a) A tag used alone shall be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by the use of a lock. Appropriate measures are:
 - 1) Removal of an isolating circuit element.
 - 2) Blocking of a controlling switch.
 - 3) Opening of an extra disconnecting device and tagging it.
 - (b) The tag must be attached to the energy-isolating device by a non-reusable device such as a one-piece all-environment nylon cable tie.
- (3) Group Lockout/Tagout. When servicing or maintenance is performed by a crew, they shall utilize a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal LOTO.
 - (a) Each authorized employee verifies or observes whether the equipment or circuit is deenergized.
 - (b) Primary responsibility is vested in an authorized employee for a set number of employees working under the protection of a group lockout or tagout device.
 - (c) Each authorized employee shall affix a personal lock and tag to the group LOTO device such as a lock box. This shall be placed on the group LOTO device when the employee begins work, and shall be removed when the employee stops working on the equipment being maintained.
- (4) Lockout/tagout duration. The LOTO procedure is written to protect employees while engaged in servicing or maintenance work. Energy isolating devices shall be removed when the authorized employee leaves

the work site or facility. If maintenance or servicing has not been completed or equipment parts are on order, the following safeguards shall be followed:

- (a) The authorized employee will remove circuit components or other isolating devices to make the equipment inoperable.
 - (b) System lock(s) and/or tag(s) will be placed on the energy isolating device(s) to make the equipment inoperable.
- (5) Lockout/Tagout protection transfer. The LOTO protection responsibility may be transferred to another individual under certain circumstances. If an employee is unable to remove LOTO due to absence or other extreme causes, the following procedure shall be followed:
- (a) The LOTO protection can ONLY be transferred to the issuing employee's immediate supervisor.
 - (b) The supervisor will make sure the procedures outlined in paragraph 3.c. for LOTO were followed in order to ensure safe removal of LOTO.
 - (c) If the work is unfinished, the supervisor may select another authorized employee to complete the work. The authorized employee shall place his/her own lock/tag on the energy isolating device.
 - (d) To restore equipment to service, the supervisor shall follow procedures outlined in paragraph 3e, Restoring Equipment to Service. IMPORTANT: In all cases where LOTO protection has been transferred to the supervisor, he/she shall CUT the lock(s) and remove tags.
 - (e) The supervisor will restore the equipment to service and notify affected individual(s) or office(s) the equipment is available or functioning.

4. PERIODIC INSPECTIONS.

- a. Regional Safety Office and/or Maintenance staffs shall conduct periodic inspections, at least annually, of the energy control procedures to ensure that procedures and requirements are being followed. Regional Safety Office shall forward inspection data to CSO (A7700) annually.
- b. The inspections shall be performed by an authorized employee other than the one(s) utilizing the energy control procedure being inspected.

- c. The inspection shall be conducted to correct any deviations or inadequacies identified.
- d. Where LOTO is used for energy control, the inspection shall include a review between the inspector and each authorized employee of that employee's responsibilities under the energy procedure being inspected.
- e. Regional Safety Office and Maintenance staffs shall certify that inspections have been performed and that:
 - (1) The certification identifies the machinery or equipment on which the energy control procedure was being utilized.
 - (2) The date of the inspection is recorded.
 - (3) Employees are included in the inspection.
 - (4) The person performing the inspection is identified.
 - (5) Deficiencies are noted.
 - (6) Corrective actions are taken.

5. TRAINING.

- a. Initial training. Training will be conducted for all authorized, affected employees and will include:
 - (1) Overview of Western's LOTO program.
 - (2) Recognition of LOTO.
 - (3) Purpose of LOTO.
 - (4) LOTO compliance.
 - (5) Locks and/or tags are never to be bypassed, ignored, or otherwise defeated.
 - (6) Locks and/or tags shall not be removed without proper authority.
- b. Tag limitations.
 - (1) Tags are warning devices only, and do not provide the physical restraint against operation.

(2) Effectiveness depends on compliance by all personnel.

- c. Authorized employees training. Employees authorized to perform LOTO duties shall show proficiency and knowledge in this Order.
- d. Periodic training. Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment, or processes that present a new hazard, when there is a change in the energy control procedures, or when a periodic inspection reveals deviations from or inadequacies in the employee's knowledge or use of energy control procedures.
- e. New employee training. Training will be conducted by the immediate supervisor to ensure review of this Order, and understanding of LOTO Procedures.
- f. Contractors.
 - (1) When contractors are conducting maintenance/servicing in Western manned facilities they shall follow the requirements of this procedure. Indoctrination shall be accomplished through the person responsible for the facility being worked at (i.e., Construction Inspector, Regional Facility Manager).
 - (2) Contractors in unmanned facilities or new construction in manned facilities will be required to follow the requirements of 29 CFR 1926.417 which will be included in each specification.

6. LOCKOUT/TAGOUT EQUIPMENT.

Protective materials and hardware. Each Regional Maintenance Office is responsible for providing applicable employees with the necessary LOTO equipment.

- a. Locks, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware shall be provided for isolating, securing, or blocking machines or equipment from energy sources.
- b. When key operated locks are used, access to keys will be restricted only to the assigned employee. Extra keys shall not be available to other personnel.
- c. LOTO devices shall be singularly identified (i.e., will be the only devices used for controlling energy and shall not be used for other purposes) and shall meet the following requirements:

(1) Durable.

- (a) Shall be capable of withstanding the environmental conditions to which they are exposed for the maximum period of time the exposure is expected.
- (b) Shall be constructed to minimize deterioration of the tag or the message when exposed to weather conditions.
- (c) Shall not deteriorate when used in corrosive environments where acid and/or alkali chemicals are handled and/or stored.

(2) Standardized.

- (a) Energy isolating devices will be standardized within the crews in at least one of the following criteria: color, shape, or size.
- (b) Tagout devices shall use standard print and format. Standardized tags will be available at Regional warehouses (see page 68 for sample tag).

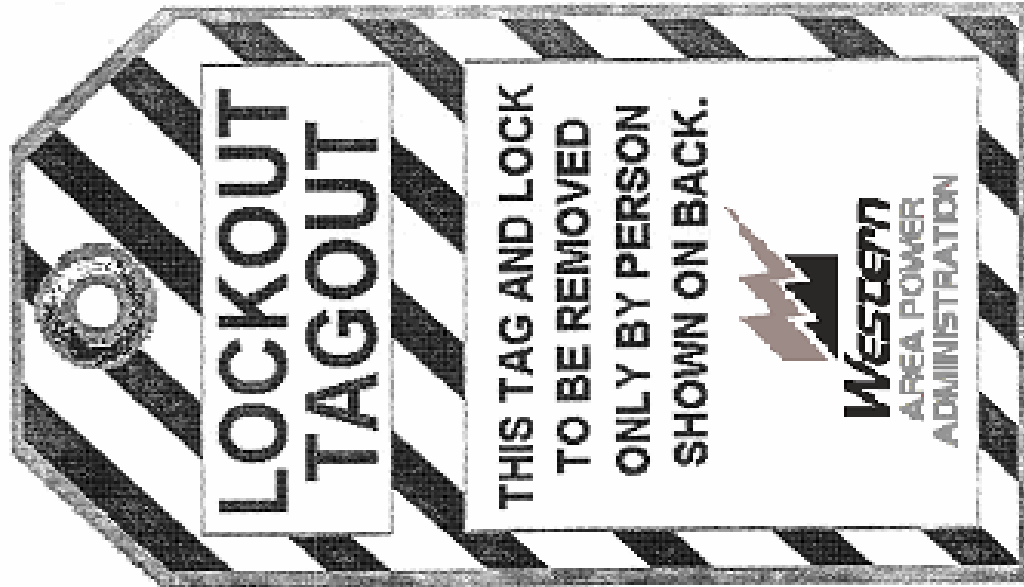
(3) Substantial.

- (a) Lockout devices shall be substantial enough to prevent removal, without excessive use of force or unusual techniques, such as the use of bolt cutters or other metal cutting tools.
- (b) Tagout device attachments shall, in addition to other requirements for use, be of a nonreusable type, attachable by hand, self-locking, and nonreleasable with a minimum unlocking strength of no less than 50 pounds and have the general design and basic characteristics of being at least equivalent to a one piece, all-environment-tolerant nylon cable tie.

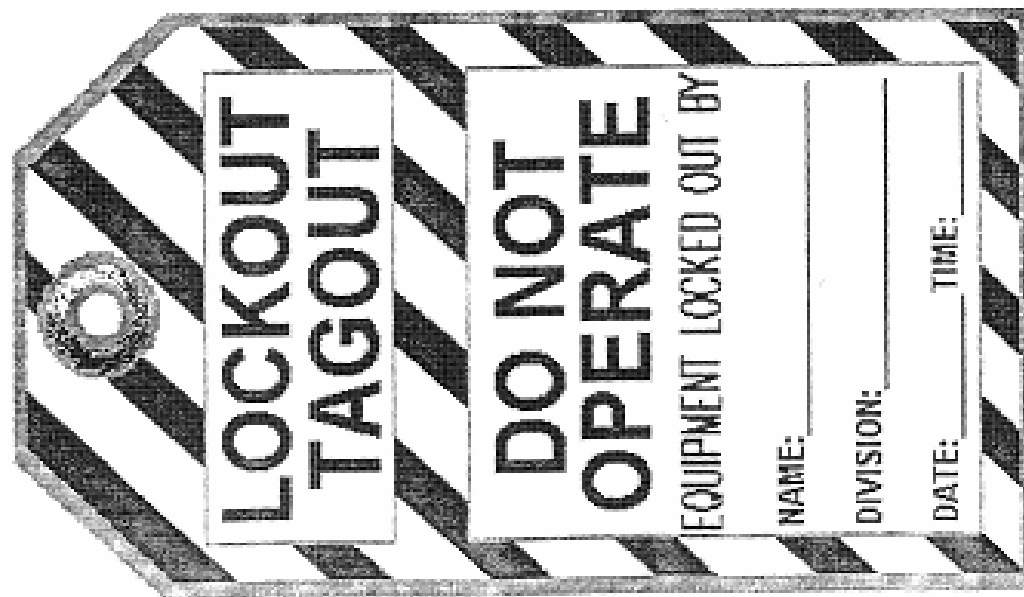
(4) Identifiable.

- (a) Tagout/lockout devices shall indicate the identity of the personnel and the organization applying the device.
- (b) Tagout devices shall warn against hazardous conditions if the machine or equipment is energized and will include the legend: Do Not Operate.

SAMPLE FRONT VIEW



SAMPLE BACK VIEW



LOCKOUT/TAGOUT DEFINITIONS

Affected employee. An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized employee. A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this chapter.

Capable of being locked-out. An energy isolating device is capable of being locked-out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy isolating devices are capable of being locked-out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

Energy isolating device. A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: a manually operated electrical circuit breaker, a disconnect switch, a manually operated switch which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently, a line valve, a block, and any similar device used to block or isolate energy. Push buttons, selector switches, and other control circuit type devices are not energy isolating devices.

Energy source. Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Lockout. The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout devices. A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy-isolating device in a safe position and prevent the energizing of a machine or equipment, including blank flanges and bolted slip blinds.

Servicing and/or maintenance. Workplace activities include constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning, or unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to an unexpected energization or startup of the equipment or release of hazardous energy.

Tagout. The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout device. A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

CHAPTER XII

HAZARD COMMUNICATION

1. OBJECTIVE. This chapter establishes a Hazard Communication Program (HCP) in compliance with 29 CFR 1910.1200, Hazard Communication Standard (HCS), and other regulatory requirements.
2. REQUIREMENTS.
 - a. Chemical assessment.
 - (1) Inventory. An inventory of chemicals for each manned facility shall be verified annually. Adjustments to the inventory should be made on a continual basis, whenever products are purchased and/or discontinued.
 - (2) Determination of hazard.
 - (a) Purchased chemicals. All chemicals ordered for use will require a statement on the purchase request asking for a Material Safety Data Sheet or, in lieu of the MSDS, a statement from the manufacturer that one is not necessary for the materials ordered. The Regional Occupational Safety and Health Managers will inspect all MSDSs received for new hazardous chemicals purchased to assure they are complete and contain the information specified in Section 1910.1200(g) of the HCS. The manufacturer's hazard determination will be used in good faith when the MSDS meets the requirements.
 - (b) Contractor chemicals. Prior to beginning work, each contractor shall provide Western with a list of all chemicals and a MSDS for each chemical that will be used by the contractor's employees, or manufactured by the contractor at the Western facility. The Material Safety Data Sheet and list of hazardous chemicals shall be evaluated by the Regional Occupational Safety & Health Managers to determine if they pose any new or significant risks to Western employees. Western employees shall be notified of all physical and/or health hazards associated with the chemical(s). Western shall reserve the right to refuse the contractor use or manufacture of a specific chemical if it poses an excess risk or would require additional training of Western employees.
 - (c) Employee-owned chemicals.
 - 1 Any employee who wishes to bring a chemical, including consumer products, into the workplace must first submit a written request providing the name of the chemical, the manufacturer, the manufacturer's address, and the reason for the request.

- 2 The completed request shall be transmitted by the employee's supervisor to the ROS&HM for approval. The ROS&HM will secure an MSDS from the chemical manufacturer. All MSDSs received will be evaluated.
- 3 It is determined the employee's chemical presents no additional risk, the employee will be allowed to bring the chemical into the workplace. Approved employee-owned chemicals shall be added to the facility inventory.
- 4 The above does not apply to the following employee-owned chemicals which are totally exempted from regulation under the HCS.
 - a Tobacco and tobacco products.
 - b Food, cosmetics, etc. intended for the personal consumption by employees while in the workplace.

b. Labeling.

- (1) Manufacturer's responsibility for container labels. The procurement request package for purchasing chemicals shall require that the manufacturers/vendors appropriately label, pack, and ship their products sold to Western. The label shall include:
 - (a) The identity of the contents.
 - (b) The appropriate hazard warning(s).
 - (c) A list of the name(s) and address(s) of the manufacturer(s) of the chemical(s).
- (2) Western's responsibility for container labels. The receiving warehouse will verify all incoming containers of chemicals are properly labeled in accordance with the purchasing document. The chemical inventory and a complete set of approved MSDSs will be maintained in the receiving warehouse.
 - (a) Unlabeled containers. Delivery shall be refused for all inappropriately or unlabeled containers.
 - (b) Illegible labels. Containers bearing illegible labels not accompanied by a MSDS shall be refused. If a MSDS accompanies a container bearing an illegible label, a new label must be made before receiving the container.

- (c) Inadequately labeled containers. Inadequately labeled containers, those labels not meeting the requirements of paragraph 2b(1), will be refused by receiving warehouse personnel.
- (3) Containers. All containers used by Western personnel containing hazardous chemicals shall be labeled with the chemical(s) identity and its appropriate hazard warning(s) developed from the MSDS. NOTE EXCEPTION: Single person, single shift.
- (4) Shipped containers. All containers of chemicals being shipped by Western will meet CFR Title 49, Department of Transportation requirements and be clearly labeled as to:
 - (a) The identity of the contents.
 - (b) The appropriate hazard warning(s) using the information on the manufacturers MSDS.
 - (c) The address of the office shipping the chemical.
 - (d) An accompanying copy of the chemicals MSDS.
- c. Material safety data sheet. To assure the integrity of the MSDS requirements, all hazardous chemicals must have a MSDS. The ROS&HMs shall evaluate MSDSs for new chemicals to be added to MSDS inventory.
 - (1) Evaluation of MSDS - hazard determination. No hazardous chemical shall be brought into or used in the workplace until a MSDS for the product has been received, reviewed, and approved by the ROS&HM.
 - (2) Unacceptable MSDSs.
 - (a) Any MSDS found deficient will be returned to the chemical's manufacturer with a letter explaining the deficiencies. Chemicals will not be approved for purchase and/or use until a satisfactory MSDS has been obtained.
 - (b) If an approved MSDS cannot be obtained, all existing stock will be returned to the manufacturer (vendor) and not reordered.
 - (3) Employee access to MSDS.
 - (a) Immediate access. MSDSs shall be maintained in Safety Offices and/or warehouses and will be available at all times for supervisors, employees, or their representatives to review.

- (b) Employee copy of MSDS. Any employee may obtain a copy of the MSDS for any product found in the workplace.
- d. Training. Initial Hazard Communication Training covering the following subjects will be given to supervisors and employees. All participants of the training will demonstrate knowledge and proficiency.
 - (1) Training contents.
 - (a) Routes of exposure to hazardous substances and effects of exposure.
 - (b) Explanation of Western's HCP including the requirement for a written JHA to be completed when any highly toxic or extremely hazardous chemical is used.
 - (c) Location of chemical inventory and MSDSs and how to obtain copies.
 - (d) How to read and understand the MSDS.
 - (e) Measures of protection for the hazardous chemicals in the work area, including work practices, emergency procedures, and the use of PPE, and limitations of each.
 - (f) Labeling system and requirements.
 - (2) Training records. Training records will be maintained in accordance with Westerns Records Management Manual.
 - (3) Employee information. Employees will receive additional information from their supervisor regarding the identification of hazardous chemicals used in their specific work areas.
 - (4) New hazard training.
 - (a) Prior to a new hazardous chemical being introduced into any work area, all affected employees will be trained in its safe handling.
 - (b) In the event a new chemical is found in use or communicated to Western or contract employees by a chemical manufacturer, employees in the affected Region will be immediately notified and receive training in safe handling procedures of the identified chemical.
 - (5) Hazards of nonroutine tasks. Periodically, employees are required to perform nonroutine tasks that involve the use of hazardous or toxic

chemicals. Written work procedures including a written JHA (see Section 17 of the Power System Safety Manual and Chapter 12 of the Power System Maintenance Manual) must be accomplished prior to starting work on such projects.

e. On-Site Contractors.

- (1) Informing of hazards. The COR shall inform on-site contractors of known chemical hazards to which their employees may be exposed while working on Western facilities and provide information of Western's labeling policy. The contractor may request and will be provided copies of applicable MSDSs.
- (2) Contractor training records. Prior to starting work, each contractor shall sign a statement acknowledging the receipt of specific MSDSs and that his/her employees have received training on the chemical hazards to which they may be exposed while working at Western facilities. Individual employee training records shall be available for the Contracting Officer's review.
- (3) Contractor-owned chemicals. The contractor will verify that each container of hazardous chemicals brought into the Western workplace is properly labeled in accordance with 29 CFR 1910.1200f(5). The COR shall periodically verify compliance with this Order.

CHAPTER XIII

BLOODBORNE PATHOGENS

1. OBJECTIVE. This chapter establishes a bloodborne pathogen program (BBPP) that will provide protection for Western employees who may be exposed to blood or other potentially infectious materials during the course of their work. Occupational exposure to blood or other potentially infectious materials is defined in paragraph (b) of OSHA's Bloodborne Pathogens Standard 1910.1030. Pathogens include but are not limited to hepatitis B virus (HBV) and human immunodeficiency virus (HIV). Program requirements are defined in 29 CFR 1910.1030 and 1910.269, Electric Power Generation, Transmission, and Distribution which requires some field crewmembers to be properly trained to render medical assistance.
2. APPLICABILITY. This chapter applies to all Western employees.
3. POLICY.
 - a. Covered Employees.
 - (1) It is Western's policy to make available to all employees by virtue of a Good Samaritan response to a fellow employee that may have been potentially exposed to BBP, the protection afforded by this chapter at no cost to the employee. This shall include the hepatitis B vaccination, the vaccination series, and the follow-up medical evaluation as outlined in paragraph 6, Procedures.
 - (2) Employees in the following job classifications, linemen, electricians, equipment operators, meter and relay mechanics, and electronic equipment mechanics or other employees as determined by the Safety Office on a case-by-case basis, may be potentially exposed to infectious blood, blood products, blood components, and body fluids during the course of administering CPR/First Aid to victims of electric shock and medical trauma.
4. RESPONSIBILITIES.
 - a. Employees.
 - (1) Attend training, use knowledge, and practice techniques learned.
 - (2) Contact supervisor if or when possible occupational exposure to BBP occurs.

b. Supervisors.

- (1) Assure appropriate number of employees are trained to render medical assistance and that they are properly trained regarding the requirements of OSHA's Bloodborne Pathogen Standard 1910.1030 and OSHA's Electric Power Generation, Transmission, and Distribution Standard 1910.269(b).
- (2) Should an exposure incident occur, an exposure incident (Accident/Incident Report, WAPA 5484.1) shall be completed and submitted to Safety Office to document the event.

c. Safety and Security Offices.

- (1) Ensure that training, exposure, consent/declination forms are maintained in each employee's official personnel file for duration of employment plus 30 years.
- (2) Ensure that proper PPE is accessible to employees who may administer medical assistance.
- (3) Responsible for administering the inoculation program required by this chapter.

5. REQUIREMENTS.

a. Information.

- (1) All new Western employees identified in job classifications listed in paragraph 3a(2) above and are designated to respond by administering CPR/First Aid shall be trained in CPR/First Aid and in the Bloodborne Pathogen Standard within 3 months of their hire date and at least annually thereafter.
- (2) A hepatitis B vaccine information sheet and a consent/declination form will be given to each employee trained according to this policy at the time of training. The opportunity to be given the hepatitis B vaccine and follow-up testing (either pre-or post exposure) shall be at no cost to the employee.

b. Training Program.

Training shall include:

- (1) A copy of the regulatory text of the standard and an explanation of its contents.

- (2) A general explanation of the epidemiology and symptoms of bloodborne pathogens diseases.
- (3) An explanation of the modes of transmission of BBP.
- (4) An explanation of Western's exposure control program, and the means by which the employee can obtain a copy of the written plan.
- (5) An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials.
- (6) An explanation of the use and limitations of practices that will prevent or reduce exposure including appropriate engineering controls, work practices and personal protective equipment (PPE).
- (7) Information on the types, proper use, location, removal, handling, decontamination and/or disposal of PPE.
- (8) An explanation of the basis for selection of personal protective equipment.
- (9) Information on the hepatitis B vaccine, including information on its effect, safety, method of administration and benefits of being vaccinated, along with a copy of Figure 1 of this chapter; and that the vaccine and vaccination will be offered free of charge.
- (10) Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials.
- (11) An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available.
- (12) Information on the post-exposure evaluation and follow-up that Western is required to provide for the employee following an exposure incident.
- (13) An explanation of the signs, labels, and color coding required by the standard.
- (14) An opportunity for interactive questions and answers with the person conducting the training session.
- (15) The person(s) conducting the training shall be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace.

- c. Training Records. Records of training received by employees will be kept for a minimum of 3 years. Training records will be made available to employees or their representatives upon request. Records will include:

- (1) Training dates.
- (2) A summary of the training contents.
- (3) Name(s) and qualifications of the trainer.
- (4) Names and job titles of the trainees.
- (5) Bloodborne Pathogen Employee Receipt (Figure 2 of this chapter).

6. PROCEDURES.

a. Exposure Control Plan.

- (1) Western will offer free hepatitis B vaccine and vaccination series after initial training, within 10 working days of initial assignment and again to employees identified in 3a(2) plus any booster doses recommended by a medical authority unless:
 - (a) The employee has previously received the complete hepatitis B vaccination series.
 - (b) Antibody testing reveals that the employee is immune.
 - (c) Medical reasons prevent the employee from being vaccinated.
- (2) Western employees will not be required to participate in an antibody-prescreening program to receive the hepatitis B vaccination series. All medical evaluations and procedures will be performed by or under the supervision of a licensed physician or an appropriately trained and licensed health care provider and administered according to current recommendations of the U.S. Public Health Service. Vaccinations will also be provided even if the employee initially declines but later accepts treatment while covered by the Bloodborne Pathogen Standard. Employees who decline the vaccination must sign a declination form (see Figure 3), page 83.
- (3) Employees will use universal precautions in all situations as a method of infection control in which all human blood and certain human body fluids are treated as if known to be infectious for hepatitis B, HIV and other BBP. Pocket mouth-to-mouth resuscitation devices shall be used during CPR

medical assistance. Disposal gloves will be a standard component of emergency response equipment and will be donned by all personnel prior to initiating CPR and medical treatment. Employees shall be familiar with the location of first aid kits.

- (4) To prevent subsequent exposure to BBP, all gloves, pocket resuscitators, and any other material potentially containing infectious material shall be disposed of in plastic bags containing the biohazard symbol and the word BIOHAZARD or in red plastic bags that are not to be used for any other purpose. Materials shall not be reused.
- (5) Employees shall immediately report all exposure incidents to their supervisor for timely medical evaluation and follow-up by a health care professional, as well as for timely testing of the source individual's blood for hepatitis B and HIV. Reports will be handled by Western in the strictest confidence and according to local laws governing the reporting of incidents. At the time of the exposure incident the exposed employee will be directed to a health care professional along with a report of the specific exposure, route of exposure and relevant medical records, including hepatitis B vaccination status. The medical evaluation and follow-up will comply with the requirements found in 29 CFR 1910.1030.
- (6) Medical records will be kept in accordance with 29 CFR 1910.1030(h) recordkeeping and shall be maintained for at least the duration of employment plus 30 years.

HEPATITIS B VACCINE INFORMATION SHEET

There are currently two forms of synthetic hepatitis B vaccines available; both vaccines are hepatitis B recombinant derived vaccines. Their protective effect is estimated at or above 90 to 95 percent. For more information, contact your health care provider.

Hepatitis B vaccines are indicated for immunization against potential infection from hepatitis B virus for all persons who may have been exposed to infected blood, human tissues or fluids.

Use of these hepatitis B vaccines is not recommended for anyone who may be hypersensitive or allergic to yeast or any other component of the vaccine. Individuals experiencing such a reaction after immunization with a recombinant hepatitis B vaccine should not receive further injections.

Warnings: Hepatitis B vaccines will not prevent infection in individuals who have already been infected with hepatitis B, whose infection has not been recognized or in individuals who do not achieve protective antibody titers.

Precautions: Vaccine administration should be delayed in persons with any febrile illness or active infection. Its effect on pregnancy or nursing mothers has not been adequately defined.

Adverse Reactions: Infrequent adverse reactions can include swelling, redness at the injection site, fever, headache, and dizziness. Uncommon side effects can involve any of the bodily systems and can include pain, itching, and bleeding at the injection site, general sweating, malaise, chills, weakness, tingling, low blood pressure, influenza-like symptoms, upper respiratory illness, nausea, abdominal cramping, pain, diarrhea, swollen lymph nodes, pain, and stiffness in the arm, shoulder, or neck, muscle aches, rashes, hives, irritability, and sleeplessness. There have also been reports of anaphylaxis, palpitations, asthma-like symptoms, abnormal liver function tests, headaches, neurologic illness, and others.

Dosage and Administration: Hepatitis B vaccines are administered through intramuscular injection in the deltoid region of the arm. The immunization regimen consists of three doses. Start date, 1 month later, and 6 months after the first dose.

Figure 1
Hepatitis B Vaccine Information Sheet

BLOODBORNE PATHOGEN EMPLOYEE RECEIPT

I, _____ acknowledge that I have
received training in bloodborne pathogens (BBP). Included in this training was:

- an explanation and display of BBP kits;
- actions to take to prevent contact with BBPs;
- information on the hepatitis B vaccine; and
- actions to take and who to contact in an emergency.

Signature: _____ Date: _____

Figure 2
Bloodborne Pathogen Employee Receipt

HEPATITIS B VACCINE CONSENT/DECLINATION FORM

In the course of your job duties, you cannot reasonably anticipate coming in contact with blood or other infectious materials. OSHA requires that all employees who do have exposure have hepatitis B vaccine made available to them at no cost. Hepatitis B vaccine need not be provided if you have had the complete hepatitis B vaccination series, if hepatitis B antibody testing has revealed that you are immune, or if the vaccine is not advised for medical reasons. Hepatitis B antibody testing is available to you at no cost if you desire such testing prior to deciding whether or not to receive hepatitis B vaccine. This testing is not mandatory. The decision about whether to receive hepatitis B vaccine is yours to make.

PLEASE COMPLETE ONE OR MORE OF THE FOLLOWING SECTIONS:

1. **REQUEST FOR ANTIBODY TESTING.** I, _____,
request to have hepatitis B antibody testing complete prior to making my decision
on whether to receive the hepatitis B vaccine.

Signature: _____ Date: _____

2. **REQUEST FOR VACCINE.** I, _____,
have read and understood the Hepatitis B vaccine information sheet. I consent and
desire to receive immunization according to the recommended schedule and
recognize that adverse reactions may occur.

Signature: _____ Date: _____

3. **DECLINE HEPATITIS B VACCINE.** I, _____,
understand that in the course of my duties it is not reasonably anticipated that I will
come in contact with blood or other potentially infectious materials. I have been given
the opportunity to be vaccinated with hepatitis B vaccine at no charge. However, I
decline the vaccination at this time. I understand that by declining this vaccine, I
continue to be at risk of acquiring hepatitis B. If in the future I decide to be vaccinated, I
may request through my supervisor and receive the vaccination series at no charge to
me.

Signature: _____ Date: _____

Figure 3
Hepatitis B Vaccine Consent/Declination Form

CHAPTER XIV

CONFINED or ENCLOSED SPACE ENTRY SEE DEFINITIONS AT THE END OF THIS CHAPTER

1. OBJECTIVE. This chapter establishes policy for implementation and administration of the confined or enclosed space entry program for Western consistent with 29 CFR 1910.146 and .269 procedures. Policy and procedure requirements are designed to protect personnel from the hazards of entry into confined or enclosed spaces.
2. GENERAL REQUIREMENTS. These requirements apply to routine entry into enclosed spaces and non-routine entry into confined spaces. If after the requirements of this order are adhered to, hazards remaining in the enclosed space endanger the life of an entrant or could interfere with escape from the space, then entry into the enclosed space shall meet the confined space entry requirements and written job hazard analysis is required.
 - a. Safe Work Practices. The supervisor shall ensure the use of safe work practices for entry into and work in confined or enclosed spaces and for rescue of employees from such spaces.
 - b. Evaluation of Potential Hazards. Before any entrance cover to a confined or enclosed space is removed, the supervisor shall determine whether it is safe to do so by checking for the presence of any atmospheric pressure or temperature differences and by evaluating whether there might be a hazardous atmosphere in the space. Any conditions making it unsafe to remove the cover shall be eliminated before the cover is removed.
 - (1) NOTE: The evaluation called for in the above may take the form of a check of the conditions expected to be in the confined or enclosed space. For example, the cover could be checked to see if it is hot and, if it is fastened in place, could be loosened gradually to release any residual pressure. A determination must also be made of whether conditions at the site could cause a hazardous atmosphere, such as an oxygen deficient or flammable atmosphere, to develop within the space.
 - c. Hazardous Atmosphere. Employees shall not enter any confined or enclosed space while it contains an oxygen deficient, life/health risk contaminated, or explosive atmosphere. Atmospheres containing remnant (after clean up) contaminants such as SF₆ shall be entered only when respiratory and skin protection is provided.

d. Training requirements:

- (1) Training shall ensure all employees and supervisors whose work involves confined or enclosed space entry acquire the understanding, knowledge, and skills necessary for the safe performance of all duties assigned.
- (2) Training shall be provided to each applicable employee and supervisor:
 - (a) Before employees and supervisors are assigned duties that involve entry into enclosed spaces.
 - (b) When there is a change in assigned duties relative to confined or enclosed space.
 - (c) When there is a change in operations/procedures.
 - (d) Employees and supervisors involved in confined or enclosed space duties shall be trained in emergency rescue procedures.
- (3) Training records of an employee's proficiency in the duties required shall be maintained and available for inspection by employees and their authorized representatives.

3. SPECIFIC REQUIREMENTS. The following procedures are to be accomplished before entry or work starts.

- a. Drain. The contents of the confined or enclosed spaces shall be emptied prior to entry. If the space cannot be emptied prior to entry, then the space shall be classified as a permit-space and permit space requirements shall be followed.
- b. Purge. All confined or enclosed spaces that may have contained hazardous material shall be purged with fresh/respirable air. Purging shall continue until measurements establish there is sufficient oxygen in and around the space (not less than 19.5 percent) and the air is determined to be non-hazardous, by measurement.
- c. Lockout/Tagout. Whenever a confined or enclosed space is equipped with power driven internal equipment the power must be effectively disabled. If the equipment or machinery is not de-energized and locked out or tagged in accordance with 29 CFR 1910.147 then it must be guarded as required in other general industry standards, such as Subpart O, for machine guarding, and 29 CFR 1910.333 for the guarding of electric equipment. As long as the equipment or machinery inside the confined or enclosed space remains guarded, employees within the space are not considered to be exposed to any equipment-related hazards.

- d. Lighting. Only explosion-proof or specially guarded low temperature lights are to be used inside confined or enclosed spaces.
- e. Ladders. All ladders used inside a confined or enclosed space will be securely fastened and free of defects. They shall be placed so that an employee or rescuer does not have to pull him/herself up on the ladder.
- f. Welding or Hot Work. Welding or other hot work (e.g., cutting, brazing, grinding) shall be prohibited in all confined or enclosed spaces unless a specific hot work permit is obtained from the responsible Manager with the concurrence of the Safety Office. A suitable fire extinguisher shall be available. Fire prevention **must be assured**, as emergency exits are restricted. Airline welding hoods must be provided.
- g. Attendant. An attendant who is current in CPR and first aid techniques shall be stationed immediately outside the exit while work is performed in the confined or enclosed space to render emergency assistance. The attendant is not precluded from performing other duties outside the enclosed space if these duties do not distract the attendant from monitoring employees within the space.
- h. Calibration of Test Equipment. Test instruments used to monitor atmospheres in confined or enclosed spaces shall be calibrated per the manufacturer's instructions. Many Western facilities are located in rural areas without effective or rapid rescue services. The value of preparation in ensuring accurate and operable test instruments **cannot** be over-emphasized.
- i. Rescue Equipment. Supervisors shall ensure equipment is available to ensure the prompt and safe rescue of employees from the confined or enclosed space. The presence on site of an operable electrical fan (scoop) and a large diameter hose to pump fresh air into the breathing zone of a trapped or ill employee until rescue is effected is highly recommended to reduce employee heat and psychological stress. Keep the air scoop intake away from carbon monoxide and other contaminants.
- j. Atmospheric Monitoring. Monitoring of confined or enclosed spaces shall be done by testing for the oxygen level first, explosive gases second, and toxic gases last. When testing, take samples from various locations in the confined or enclosed space so as to detect dangerous gases that may accumulate in low or high areas. A written record shall be available to all entrants and be kept for review for 1 year. The following testing shall be completed:
 - (1) Oxygen Monitoring. Prior to entering a confined or enclosed space, the internal atmosphere must be tested for oxygen deficiency with a direct-reading meter. If continuous forced air ventilation is provided, testing is

not required provided the procedures used ensure that employees are not exposed to the hazards of oxygen deficiency.

- (2) Flammable Gases and Vapors Monitoring. Prior to entering a confined or enclosed space, the internal atmosphere must be tested for flammable gases and vapors with a direct-reading meter. This test shall be performed after the oxygen testing and ventilation demonstrates there is sufficient oxygen to ensure the accuracy of the test for flammability.
- (3) Toxic Gas Monitoring. Prior to entering a confined or enclosed space, the internal atmosphere must be tested for toxic air contaminants with a direct-reading meter.

4. PERMIT SPACE REQUIREMENTS.

a. Duties and Responsibilities.

- (1) Regional Manager.
 - (a) Ensure that requirements of this chapter are fulfilled.
- (2) Regional Maintenance Manager.
 - (a) Ensure training of personnel is conducted.
 - (b) Ensure coordination with outside responders.
 - (c) Ensure equipment is in compliance with standards.
 - (d) Ensure requirements for entry have been completed before entry is authorized.
 - (e) Maintain a master inventory of identified permit spaces.
 - (f) Ensure that cancelled permits are reviewed for lessons learned.
- (3) Entry Supervisor.
 - (a) Determine if conditions are acceptable for entry.
 - (b) Authorize entry and oversee entry operations.
 - (c) Ensure that necessary information on hazards is kept at the work site for the employees and rescue team to review.

- (d) Ensure rescue team is available, trained, and instructed in their rescue duties. Rescue team members must have current certification in first aid and CPR.
- (e) Ensure confined space monitoring is performed by personnel qualified and trained in confined space entry procedures.
- (f) Ensure a list of monitoring equipment and personnel qualified to operate the equipment is maintained.
- (g) Ensure that the rescue teams have received training before the employees and supervisors are assigned duties under this section.
- (h) Know the hazards that may be faced during entry, including the mode, signs or symptoms, and consequences of exposure.
- (i) Fill out a permit (See Figure 1, page 95).
- (j) Notify all involved workers of the permit requirements.
- (k) Post the permit in a conspicuous location near the permit space.
- (l) Renew the permit or have it reissued as needed (a new permit is required for each shift).
- (m) Determine the number of attendants required to perform the work.
- (n) Ensure the attendant knows how to communicate with the entrants and how to obtain assistance.
- (o) Post barriers and signs.
- (p) Remain alert to changing conditions that might affect the conditions of the permit, (i.e. requires additional atmospheric testing or change in personal protective equipment).
- (q) Ensure periodic atmospheric monitoring is conducted according to the permit requirements.
- (r) Ensure workers and all support personnel adhere to permit requirements.
- (s) Ensure the permit is cancelled when work is completed.
- (t) Ensure the confined space is safely closed and all workers are notified.

(4) Employees.

- (a) Read and observe the entry permit requirements before entering confined spaces.
- (b) Stay alert to the hazards that could be encountered in the confined space.
- (c) Use protective equipment required by the permit.
- (d) Immediately exit the confined space when:
 - 1) Ordered to do so by the attendant.
 - 2) Automatic alarms sound.
 - 3) Perceive they are in danger.
 - 4) Physiological stresses or change in themselves or co-workers (dizziness, blurred vision, shortness of breath) occur.

(5) Attendant.

- (a) Maintain and monitor a sign-in/sign-out log with a count of all persons in the confined space.
- (b) Be knowledgeable of, and be able to recognize potential confined space hazards.
- (c) Maintain effective and continuous communications with personnel during confined space entry, work, and exit.
- (d) Order personnel to evacuate the confined space if he or she:
 - 1) Observes a condition not allowed on the entry permit.
 - 2) Notices the entrants acting strangely, possibly as a result of exposure to hazardous substance.
 - 3) Notices a situation outside the confined space as a hazard that could endanger personnel.
 - 4) Notices within the confined space a hazard that has not been previously recognized or taken into consideration.
 - 5) Must leave his/her work station.

- 6) Must focus attention away from the confined space he/she is monitoring.
- 7) Immediately summon the Rescue Team if crew rescue becomes necessary.
- 8) Keep unauthorized persons out of the confined space, order them out, or notify authorized personnel of the unauthorized entry.

(6) Rescue Team.

- (a) Complete training on rescue procedures prior to issuance of permit.
- (b) Respond immediately to rescue calls.
- (c) In addition to emergency response training, receive the same training required for the entrants.
- (d) Have a current certification in first aid and CPR.

5. CONTRACTOR ENTRY. In the event of an entry into an identified confined or enclosed space owned or controlled by Western, the Contracting Officer shall:

- a. Inform the contractor the work to be performed involves confined or enclosed space entry.
- b. Apprise the contractor of experience with the space that makes it a confined or enclosed space.
- c. Inform the contractor of any precautions or procedures implemented for the protection of Western employees in or near confined or enclosed spaces.
- d. Approve contractor's enclosed or confined space entry program. The program for application of flammable materials or for tunneling operations must be developed by a certified industrial hygienist or OSHA consultation service.
- e. Ensure permit entry complies with the requirements of OSHA 29 CFR 1910.146 or State plan, if required.
- f. All the equipment required for confined space entry shall be on site, in operable condition, and set up for use prior to work commencing.

CONFINED OR ENCLOSED SPACE ENTRY DEFINITIONS

Acceptable Entry Conditions. The conditions that must exist in an enclosed space to allow entry and to ensure that employees involved with an enclosed space entry can safely enter into and work within the space.

Attendant. An individual stationed outside the enclosed space to render emergency assistance.

Authorized Entrant. An employee who is authorized by Western to enter a confined or enclosed space.

Confined Space. A space that:

- a. Is large enough and so configured that an employee can bodily enter and perform assigned work.
 - b. Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, pits).
 - c. Is not designed for continuous employee occupancy.
- (1) **Non-permit confined space.** Is a confined space that does not contain or, with respect to atmospheric hazards, have potential to contain any hazard capable of causing death or physical harm.
 - (2) **Permit-required confined space.** A confined space that has one or more of the following characteristics:
 - (a) Contains or has the potential to contain hazardous atmosphere.
 - (b) Contains a material that has the potential for engulfing an entrant.
 - (c) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross-section.
 - (d) Contains any other recognized serious safety or health hazard.

Enclosed Space. Space that:

- a. Is large enough and so configured that an employee can bodily enter and perform assigned work.
- b. Has limited or restricted means for entry or exit.

- c. Is not designed for continuous employee occupancy under normal operating conditions.

Emergency. Any occurrence or event internal or external to the enclosed space that could endanger employees.

Engulfment. The surrounding and effective capture of a person by liquid that can aspirate to cause death or plug the respiratory system.

Entry. The action by which a person passes through an opening into an enclosed space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of an individuals body breaks the plane of an opening into the space.

Entry Permit. A written or printed document provided to allow and control entry into permit spaces that contains the following specified information (See Figure 1, page 95 for sample permit).

- a. The permit space to be entered.
- b. The purpose of the entry.
- c. The date and the authorized duration of the entry permit.
- d. The authorized entrants within the permit space, by name or by such other means as will enable the attendant to determine quickly and accurately, for the duration of the permit, which authorized entrants are inside the permit space.
- e. The personnel name. Currently serving as attendants.
- f. The individual, by name, currently serving as entry supervisor, with a space for the signature or initials of the entry supervisor who originally authorized entry.
- g. The hazard of the permit space to be entered.
- h. The measures used to isolate the permit space and eliminate or control hazards before entry. Measures shall include the lockout or tagging of equipment and the purging, ventilating, and flushing the permit space.
- i. The acceptable entry conditions.
- j. The results of initial and periodic tests performed, accompanied by the names or initials of the tester, and by indication of when the tests were performed.

- k. The rescue and emergency services that can be summoned and the means for summoning those services.
- l. The communication procedures used by authorized entrants and attendants to maintain contact during the entry.
- m. Equipment, such as personal protective equipment, testing equipment communications equipment, alarm systems and rescue equipment.
- n. Any other necessary information, given to circumstance of the particular confined space to ensure employee safety.
- o. Any additional permits, such as hot work, that have been issued to authorize work in the permit space.
- p. A new permit shall be issued or original reissued whenever changing work conditions or work activities introduce new hazards into the confined space.

Entry Supervisor. The person (such as Supervisors, Foreman, or Team Lead) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry.

Hazardous Atmosphere. An atmosphere that may expose individuals to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:

- a. Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL).
- b. Airborne combustible dust at a concentration that meets or exceeds its LFL.
NOTE: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet or less.
- c. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent.
- d. Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published and which could result in employee exposure in excess of this limit.
- e. Any other atmospheric condition that is immediately dangerous to life or health (IDLH).

Hot Work Permit. Written authorization to perform operations (for example, welding, cutting, burning, and heating) capable of providing a source of ignition.

Oxygen Deficient Atmosphere. An atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen Enriched Atmosphere. An atmosphere containing more than 23.5 percent oxygen by volume.

Oxygen Working Atmosphere. An atmosphere between 19.5 and 23.5 percent oxygen by volume.

Rescue Service. The personnel designated to rescue employees from an enclosed space.

Retrieval System. The equipment (including a retrieval line, chest or full-body harness, wristlets, and/or lifting device) used for nonentry rescue of persons from an enclosed space.

Testing. The process by which the hazards that may confront individuals in an enclosed space are identified and evaluated.

Figure 1
Sample Permit
Confined Space Entry Permit
(page 1 of 2)

Date and Time

Issued: _____

Date and Time Expires: _____

Job site/Space I.D.: _____

Job Supervisor: _____

Equipment to be worked on: _____

Work to be performed: _____

Standby Personnel:

1. Atmospheric Checks: _____ Time: _____

Oxygen _____ % _____

Explosive _____ % L.F.L. _____

Toxic _____ PPM _____

2. Testers Signature: _____

3. Source isolation (No Entry): N/A Yes No

Pumps or lines blinded ☐ ☐ ☐

Electrical disconnected ☐ ☐ ☐

4. Ventilation Modification: N/A Yes No

Mechanical ☐ ☐ ☐

Natural Ventilation only ☐ ☐ ☐

5. Atmospheric check after:

Isolation and Ventilation

Oxygen _____ % > 19.5%

Explosive _____ % L.F.L < 10%

Toxic _____ PPM < 10PPM H(2)s

Testers Signature: _____

6. Communication Procedures: _____

7. Rescue Procedures: _____

Figure 1 (continued)
Sample Permit
Confined Space Entry Permit
(page 2 of 2)

8. Entry, standby, and back up persons:		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Successfully completed required training		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Is it current?		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

9. Equipment	N/A	Yes		No	
Direct reading gas monitor calibrated	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
Safety harnesses and lifelines	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
For entry and standby persons	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
Hoisting equipment	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
Powered communications	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
SCBA's for entry and standby persons	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
Protective Clothing	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
All electric equipment	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	

10. Periodic atmospheric test:					
Oxygen	%	Time	_____	Oxygen	% Time _____
Oxygen	%	Time	_____	Oxygen	% Time _____
Explosive	%	Time	_____	Explosive	% Time _____
Explosive	%	Time	_____	Explosive	% Time _____
Toxic	%	Time	_____	Toxic	% Time _____
Toxic	%	Time	_____	Toxic	% Time _____

We have reviewed the work authorized by this permit and the information contained herein. Written instructions and safety procedures have been received and are understood. Entry cannot be approved if any square is marked "No". This permit is not valid unless all appropriate items are completed.

Permit Prepared By: (Supervisor) _____

Approved By: (Unit Supervisor) _____

Reviewed By: (Safety Manager) _____

(Print Name)

(Signature)

CHAPTER XV

ERGONOMICS

1. OBJECTIVE. This chapter establishes a program to identify, prevent and control ergonomic hazards in the workplace.
2. APPLICABILITY. This program applies to all Western employees.
3. POLICY. Western shall maintain an Ergonomics Program that identifies, prevents, and controls ergonomics hazards in the workplace. The program includes health and risk factor surveillance, work-site evaluations and improvement, medical management, training, and program review and evaluation.
4. GENERAL INFORMATION. The goal of any health program is to prevent injury and illness by removing the cause. With ergonomics, this goal includes reducing or eliminating worker exposure to hazards or risk factors that lead to cumulative trauma disorders (CTD) and related injuries and illnesses. CTD is not a diagnosis, but a group of health problems with similar characteristics. CTDs usually occur in the upper body, neck, shoulders, back, arms, wrists, and hands. CTDs are also referred to as repetitive motion injuries, repetitive strain injuries, repetitive trauma disorders, and overuse injuries.
 - a. Several factors, usually in combination, contribute to the risk of developing a CTD due to stress on muscles, tendons, joints, and nerves. The presence of these factors in a job, process, operation, or work environment may not necessarily cause a problem, but they increase the risk of developing a CTD.
 - b. An Ergonomics Program is an on-going process, not a quick fix. Continued awareness and cooperation among interdisciplinary groups (facilities, procurement, data processing, safety, human resources) is essential to an effective ergonomics program. Ergonomics should be a consideration in any new design, redesign, and in the purchase of all equipment and materials.
5. RESPONSIBILITIES.
 - a. COO. Coordinates, through the CSO Safety and Security Manager, leadership and activities to implement Western's Ergonomics Program.
 - b. Regional Manager. Implements the program within the area of responsibility.
 - c. Managers and Supervisors. Provide an ergonomically safe workplace through self-assessments, participation in ergonomics training, implementation of control measures, and ensure that employees report early work-related CTD symptoms.

d. Employees.

- (1) Use provided tools or equipment properly and adhere to acceptable work methods and practices.
- (2) Notify supervisor of apparent problems with tools or equipment provided by Western that could pose an ergonomic hazard.
- (3) Notify supervisor of any work-related medical condition that develops.

6. PROGRAM ELEMENTS.

- a. Worksite Analyses. Conducting worksite analyses will identify existing and potential ergonomic hazards and conditions, operations that create hazards, or areas where hazards may develop. Analyses may include:
- (1) Examination of OSHA logs for evidence of CTD. Identification of apparent trends relating to departments, job titles, or work stations.
 - (2) Employee surveys/questionnaires. Request all employees complete an employee ergonomic survey/questionnaire and return to the appropriate Safety Office. Information must be kept confidential.
 - (3) A facility walk through using an ergonomic checklist as a guide. See Ergonomic Evaluation at the end of this chapter.
 - (4) Observe employee during work sequences and talk with employee to ensure that job and tasks are understood, including posture, force, repetition, exposure, material handling, and upper extremities risk.
 - (5) Identify ergonomic risk factors associated within a process and/or work station. Not all risk factors will be present in every CTD-producing job nor is the existence of one of these factors necessarily sufficient to cause a CTD. The following are risk factors:
 - (a) Repetitive and/or prolonged activities.
 - (b) Forceful exertions, usually with the hands (including pinch grips).
 - (c) Prolonged static postures.
 - (d) Awkward postures.
 - (e) Continued physical contact with work surfaces (contact with edges).
 - (f) Excessive vibrations from power tools.

- (g) Cold temperatures.
- (6) Foster awareness of specific risk factors for back disorders, including:
 - (a) Poor body mechanics.
 - (b) Lifting or moving heavy objects.
 - (c) Prolonged sitting, especially with poor posture.
 - (d) Ergonomic job hazard analyses should be done routinely to ensure risk factors have been reduced or eliminated to the extent feasible.
- b. Hazard Prevention and Control. Ergonomic hazards are prevented primarily by the effective design of a job or jobsite and the tools or equipment used in that job. Based on information from the worksite analysis, ergonomic hazards should be corrected or controlled.
 - (1) Engineering solutions, where feasible, are the preferred method of control. The focus of an ergonomics program is to make the job fit the person. This is accomplished by redesigning the work station, work methods, or tools to reduce the demands of the job including high force, repetitive motion, and awkward postures.
 - (2) Traditional work practices should be examined to identify static postures and repetition rates, hand and arm postures, and force levels. Work practices should be analyzed and tasks should be altered to reduce these and other stresses identified with CTDs.
 - (3) Administrative control is an important tool to reduce the duration, frequency, and severity of exposure to ergonomic hazards. By reducing the number of repetitions, using job rotation, job enlargement, etc., exposure to ergonomic hazards are lessened.
- c. Medical Management.
 - (1) Prompt reporting of symptoms by employee to supervisor.
 - (2) Prompt evaluations, diagnosis, and treatment. Obtain written guidance from medical community on employee's abilities and suggested measures to prevent recurrence.
 - (3) Identify light duty assignment(s) applicable for involved employee.
 - (4) Continue monitoring, observation, and follow up with employee to ensure medical/health provider's written recommendations are implemented.

- d. Training. Training and education will ensure that employees are informed of the ergonomic hazards they may be exposed to and provide knowledge so they are better able to actively participate in their own protection. It will also allow managers, supervisors, and employees to understand ergonomic and other associated hazards with a job or process, their prevention and control and their medical consequences.
 - (1) General training. Should include information on ergonomics, CTD, risk factors that cause or contribute to CTDs, how to prevent disorders, and how to recognize and report symptoms.
 - (2) Job specific training. All new employees and reassigned workers will receive training to include an initial orientation and a hands-on, proper usage of tools, equipment, and procedures.
 - (3) Supervisors and Managers are responsible. For the safety and health of their employees, and must be trained and able to recognize early signs and symptoms of CTDs, hazardous ergonomic work practices and procedures, and possess the knowledge to correct them.
- e. Recordkeeping. All work-related cumulative trauma disorder cases are recordable illnesses and must be entered on the OSHA log. A timely, completed WAPA F. 5484.1 should be sent to the Safety Office. If there is a question as to work relationship or recordability of any case, contact CSO Safety and Security.

ERGONOMIC EVALUATION

(page 1 of 2)

Name: _____ Org. Code: _____ Date: _____

Bldg: _____ Rm: _____

Phone: _____

Job Title: _____

Supervisor: _____ Phone: _____

ITEMS CHECKED/ADJUSTED:

Chair/Model _____

Footrest _____

Work Surface _____

Monitor/Glare _____

Screen _____

Keyboard/Wristrest _____

Mouse/Trackball _____

Copy Holder _____

Lighting _____

Vision _____

Telephone _____

Comfort Level _____

Breaks/Exercise _____

Hobbies _____

ERGONOMIC EVALUATION

(page 2 of 2)

Off Work
Activities

Previous Injuries
- Accidents

Accommodations

Comments:

(i.e., Length of time in the workforce)

CHAPTER XVI

RESPIRATORY PROTECTION

1. OBJECTIVE. This chapter provides information and guidance on the proper selection and use of respirators that will help safeguard the health and life of employees.
2. APPLICABILITY. This applies to all Western employees and their supervisors who use respiratory protection equipment.
3. POLICY. Engineering and work practice controls shall remain the primary means used to reduce employee exposure to toxic chemicals. Respirators should only be used if engineering or work practice controls are infeasible or while they are being implemented.
4. REFERENCES. OSHA 29 CFR 1910.134, NIOSH 30 CFR Part 11, NIOSH 42 CFR Part 84, ANSI Practices for Respiratory Protection Z88.2.
5. RESPONSIBILITIES.
 - a. Supervisors, Foremen, Team Leads.
 - (1) Ensure that employees requiring respiratory protection are provided and trained in the use of respirators which are applicable and suitable for the purpose intended.
 - (2) Perform a hazard analysis for any deviation from a standard procedure or during the development of a new procedure that may require respiratory protection and notify the Regional Safety & Security Manager in writing requesting a "Risk Assessment" be done.
 - (3) Develop written procedures for any activity requiring the use of respirators.
 - (4) Verify records. Records shall include fit testing, training, emergency respirator inspection and rescue.
 - b. Employees.
 - (1) Use the provided respiratory protection in accordance with instructions and training received.
 - (2) Properly maintain and inspect respirators to ensure they are free from damage, contaminants, and defects, and are safe to use.

c. Regional Safety & Security Manager.

- (1) Annually reviews all elements of the Respiratory Protection Program and assure compliance.
- (2) Arranges for proper respiratory training upon request of the responsible supervisor.
- (3) Reviews submitted hazard analysis, written procedures, and monitors the work environment to determine the need for respiratory protection equipment.
- (4) Appoints Program Administrators qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the RPP and conduct the required evaluations of program effectiveness.

d. Program Administration.

Program administration shall include:

- (1) Conducting hazard analyses and developing written procedures. All written procedures shall be reviewed at least annually.
- (2) Purchase, inspection, and maintenance of appropriate respiratory protection equipment.
- (3) Designation of employees that are to use equipment.
- (4) Arrange for annual review of respirator user's medical status, or sooner if indicated by a change in health status during the interim period.
- (5) Appropriate training for all respirator users on an annual basis and documentation.

e. Program Requirements. All respirators must be NIOSH-certified.

- (1) Selection. Selection of respirators shall be based on the following factors. (Refer to ANSI Practices for Respiratory Protection, Z88.2 most recent revision.)
 - (a) Types and concentration of hazardous contaminants present in the work environment.
 - (b) Concentration of oxygen in the work environment.

- (c) Duration of use.
- (d) Physical configuration and location of work space.
- (e) Employee acceptance and applicability of respiratory equipment.
- (f) Approval by the Regional Safety & Security Manager.

f. Inspections.

- (1) All respirators maintained for use in emergency situations shall be inspected at least monthly and in accordance with the manufacturer's recommendations, and shall be checked for proper function before and after each use.
- (2) Emergency escape-only respirators shall be inspected prior to being carried into the workplace for use. Disposable type respirators shall be inspected before each use and shall be checked for proper function.
- (3) Self-contained breathing apparatus shall be inspected monthly. Air and oxygen cylinders shall be maintained in a fully charged state and shall be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level.
- (4) For respirators maintained for emergency use, the employer shall certify the respirator by documenting the date inspection was performed, the name of the person who made the inspection, the findings, required remedial action, and a serial number or other means of identifying the inspected respirator. Provide the information on a tag or label that is: attached to the storage compartment for the respirator; is kept with the respirator; or is included in inspection reports stored as paper or electronic files.

g. Maintenance. Respirator maintenance shall include:

- (1) Cleaning and sanitizing after each use.
- (2) Inspection for defects-before and after each use.
- (3) Storage to prevent contamination and distortion after each use.

6. TRAINING. No employee shall be permitted to use a respirator, issue respirators, or supervise the use of respirators without proper training for the specific type of the respiratory protection equipment to be used. Documentation of training must be placed in the employee's training file. Training shall be provided on an annual basis

or more often if indicated by change in equipment or procedures and shall include the following information:

- a. Reason for wearing respirator.
 - b. Identification of a hazardous environment and type of respiratory protection to be worn and how it works.
 - c. Components of the respirators to be used must not be interchanged with another brand or be altered.
 - d. Inspection of respirator.
 - e. Cleaning and maintenance procedures.
 - f. Self-administered positive and negative pressure fit checks prior to each use, stressing the importance of a good seal.
 - g. Proper storage procedures.
 - h. Replacement of cartridges and end-of-service-life indicators.
 - i. Employee responsibilities.
 - j. Emergency use.
 - k. Limitations of respirators.
 - l. User certification procedures.
7. FIT TEST. Prior to issuing a respirator to any individual, a qualitative or quantitative respirator-fit test shall be used to determine the ability of each individual respirator wearer to obtain a satisfactory fit with a negative-pressure respirator or positive pressure tight-fitting facepiece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used. A fit test and certification must be completed annually. Records of respirator-fit tests shall be kept in the Regional Safety offices for the duration of employment. These records shall include the following information:
- a. Type of fit test used.
 - b. Specific makes and model of respirator tested.
 - c. Name of employee tested.

- d. Date of test.
 - e. Results of test.
 - f. Respirator protection factor based upon test results if a quantitative test was performed.
8. MEDICAL EVALUATIONS. Prior to respirator certification the employee shall receive a medical evaluation by a qualified physician. The medical questionnaire and examination shall be administered confidentially during the employee's normal working hours. In determining the employee's ability to use a respirator, the employer shall obtain a written recommendation from the physician that includes the following:
- a. Ability to use a respirator.
 - b. Any limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used.
9. ADDITIONAL MEDICAL EVALUATIONS. At a minimum, Western shall provide additional medical evaluations that comply with the requirements of this section when:
- a. An employee reports medical signs or symptoms that are related to ability to use a respirator.
 - b. The physician, supervisor, or the respiratory Program Administrator informs Western that an employee needs to be reevaluated.
 - c. Information from the respiratory program, including observations made during fit testing and program evaluation indicate a need for employee reevaluation.
 - d. A change occurs in workplace conditions (e.g., physical work effort, protective clothing, and temperature) that may result in a substantial increase in the physiological burden placed on an employee.

CHAPTER XVII

HEARING CONSERVATION PROGRAM

1. OBJECTIVE. This chapter establishes information and guidelines to prevent hearing damage to personnel through engineering changes, administrative controls, and hearing protection. This program is designed to protect the hearing of Western employees by providing information, training, medical evaluation, equipment, and by assigning responsibility.
2. APPLICABILITY. This program applies to all Western employees that are subject to hearing damage as a result of noise exposure that is directly related to the conditions of employment including facilities and equipment.
3. REFERENCES. OSHA 29 CFR 1910.95
4. RESPONSIBILITIES.
 - a. Supervisors, Foremen, and Team Leads.
 - (1) Develop specifications and purchase equipment that is “Least Noise Producing.”
 - (2) Provide hearing protection equipment and enforce the proper use of equipment.
 - (3) Apply noise-reducing technology during the maintenance and modification of equipment.
 - (4) Perform hazard analyses and review work procedures where noise is problematic.
 - b. Employees.
 - (1) Wear hearing protection as prescribed, provided, and directed.
 - (2) Report noisy environments and equipment to supervisors.
 - (3) Refrain from creating unnecessary noise.
 - (4) Take annual hearing tests.

c. ROS&HM.

- (1) Provide training, conduct noise surveys, and perform noise measurements and analyses for work areas and equipment.
- (2) Arrange for special engineering studies for noise control.
- (3) Review specifications for new equipment when noise production is a pertinent factor.
- (4) Maintain records of survey and measurement data.
- (5) Safety Office and/or HR schedules testing and medical evaluation.

5. NOISE SURVEYS.

a. General Noise Survey.

- (1) An area-wide noise level survey is to be performed for operations or areas that are suspected of producing excessive noise levels.
- (2) The survey shall be made using a sound level meter that meets the American National Standard Specifications for Sound Level Meters, Types 1 or 2, and shall be set for A-scale slow response.
- (3) Sound levels as measured shall be recorded and the records shall be maintained in the Regional Safety Office.
- (4) A detailed noise survey shall be performed when sound levels reach or exceed 85 decibels on the "A" weighing scale.

b. Detailed Noise Survey.

- (1) A detailed noise level survey shall be performed when indicated by the findings of the Region-wide survey (above) and will include:
 - (a) A determination as to what equipment or activity is generating the noise.
 - (b) Which employees are exposed to the noise.
 - (c) How long they are exposed to the noise.

- (2) The results of the detailed survey shall be documented and the records kept in the Regional Safety Office. A study of the results will be conducted to determine the best method of amelioration.
- (3) The methods of amelioration to be considered are: engineering controls, administrative controls, and personal hearing protection, or a combination thereof.
- (4) Areas and equipment identified as problematic shall be placarded.
- (5) A monitoring program will be initiated when information indicates that any employee may be exposed to noise levels of 85 decibels or greater over an 8-hour time weighted average period.
- (6) Employees shall be notified of the results.

6. PERMISSIBLE EXPOSURE. (Reference: OSHA 29 CFR 1910.95, Table G-16).

Duration Per Day, Hours	Sound Level dB Slow Response
8	90
6	92
4	95
3	97
2	100
1.5 (1 hour 30 minutes)	102
1	105
.5 (30 minutes)	110
.25 or less (15 minutes)	115

- a. When employees are subjected to sound exceeding those listed above, feasible engineering or administrative controls shall be utilized. If such controls fail to reduce sound levels within the above levels, PPE shall be provided and used to reduce sound levels within the levels of the table.
- b. Exposure to impulsive or impact noise shall not exceed 140 dB peak sound pressure level.

7. AUDIOMETRIC TESTING. All employees subjected to or with the potential for noise exposure of 85 decibels or more averaged over an 8-hour period of time as evidenced by noise surveys shall have an annual audiogram.
- a. All new employees and transfer employees shall have baseline audiograms prior to assignment to a position that involves exposure to excessive noise levels as evidenced by noise surveys.
 - b. Audiometric tests shall be administered by an audiometric technician certified by the Intersociety Committee on Audiometric Technician Training or the Council for Accreditation of Occupational Hearing Conservation.
 - c. Audiometric testing shall comply with OSHA 29 CFR 1910.95, Appendices C, D, and E.

8. TRAINING. Employees that may be exposed to noise at or above an 8-hour TWA of 85 decibels shall receive training in the harmful effect of excessive noise exposure, use and care of hearing protectors, and record locations. Training shall be repeated annually and updated to include changes in work processes and protective equipment.

HEARING PROTECTORS. Hearing protectors shall be made available at no cost to employees exposed to an 8-hour TWA of 85 decibels or greater. Employees will be given an opportunity to select hearing protectors when possible; however, adequacy of attenuation shall be evaluated by use of Appendix B, OSHA 29 CFR 1910.95. Supervisors shall ensure that hearing protectors are worn:

- a. By employees requiring protection as evidenced by noise surveys and the table on page 110.
 - b. By employees subject to excessive noise levels that have experienced a standard threshold shift.
 - c. In posted areas and while operating equipment and/or entering posted areas.
9. RECORDKEEPING. Records mandated by this program shall be kept in the employee's OPF or medical file, as follows:
- a. Noise exposure measurement records shall be retained for at least 2 years.
 - b. Audiometric test records shall be retained for the duration of the affected employee's employment plus 30 years.

CHAPTER XVIII

EMPLOYEE PROTECTION FROM HANTAVIRUS EXPOSURE

1. OBJECTIVE. This chapter establishes procedures for employees involved in work activities in or near areas with rodent infestation and describes precautions for persons involved in cleanup activities.
2. APPLICABILITY. This chapter shall cover all Western activities and all contractors performing work for Western.
3. POLICY. Western and contractor employees shall utilize the following procedures and information to protect themselves from exposure to Hantavirus Pulmonary Syndrome (HPS). The keys to controlling exposure are: (1) eliminate the conditions that attract rodents and (2) prevent the inhalation of potentially contaminated dust during all activities where rodent infestation is present. Good work practices, good personal hygiene, and the use of appropriate personal protective equipment can eliminate exposure to HPS.
4. GENERAL INFORMATION.
 - a. Testing has shown the virus exists in a wide geographical range, which includes much of Western's working area. The virus is typically carried by the deer mouse, commonly known as the field mouse, and is transmitted through the urine and/or feces of the rodents. However, other rodents such as squirrels, rats, and chipmunks may carry the hantavirus; therefore, all rodents should be treated as if they carry the virus.
 - b. Hantavirus symptoms are flu-like; i.e., fever of 101-104 degrees; body aches; chills; trouble breathing. If any combination of these symptoms appear you should contact your local health department or other medical facility.
 - c. You may obtain additional information on this subject by contacting the Center for Disease Control either through their web site or by telephone. The CDC Web site also maintains a list of links to all state health department Web sites. You may reach the CDC at: <http://www.cdc.gov/ncidod/diseases/hanta/hps> or call (404) 639-2784.
5. RESPONSIBILITIES.
 - a. Regional Safety and Security Managers.
 - (1) Ensure that training is provided and that proper PPE is accessible to employees.

b. Managers, Supervisors, Foremen and Team Leads.

- (1) Perform a hazard analysis as may be required and/or develop written procedures for any respirator usage.

c. Employees.

- (1) Report problem areas to the supervisor.
- (2) Follow procedures as set forth in this chapter.

6. REQUIREMENTS/PROCEDURES.

a. Personal Protective Equipment (PPE).

- (1) The proper combination of PPE is required to adequately protect employees from exposure to HPS. Respirators, eye protection, gloves and coveralls shall be used when moderate to heavy rodent infestation is present and dust could be generated. In certain situations where there is very little infestation and/or a rodent(s) needs to be disposed of, eye protection and gloves would suffice provided the proper cleanup (see below) and disposal procedures are followed prior to removal.
- (2) Respirators. A half-mask negative pressure air-purifying respirator in accordance with the Respiratory Protection Program (RPP), Chapter XVI, with HEPA filters, shall be used. [Disposable half-mask respirators (P-100) are acceptable in low concentration areas provided the wearer has been fit-tested for such use and proper cleanup procedures are followed (see below) prior to removal].
- (3) Gloves. Disposable chemical resistant latex or nitrile material type gloves shall be used to prevent skin contact.
- (4) Eye protection. Goggles that are non-vented shall be used.
- (5) Coveralls. Disposable Tyvek-brand coveralls or other similar brands shall be used to prevent contamination of street or work clothes and to prevent transporting the virus to another location.

b. Cleanup Procedures

- (1) Never dry sweep. Rodent fecal material and other suspect debris, including the rodents itself, shall be carefully and thoroughly saturated with one of the following:
 - (a) Ordinary household disinfectant.

- (b) A chlorine bleach solution (1 cup ((8 ounces)) bleach per 1 gallon of water) or isopropyl alcohol. MSDS must be available for chlorine bleach.
- (2) Clean up. Utilizing the appropriate PPE:
 - (a) Place the saturated rodent or fecal material in an impermeable plastic bag, seal it, and properly dispose of the bag.
 - (b) Remove the fecal material and/or debris with a HEPA vacuum in situations where sweeping and scooping is not practical.
 - (c) Dispose of the vacuum filters in the same manner as described above.
 - (d) Decontaminate the vacuum hose and its accessories by immersing in a disinfectant and/or bleach solution.
- (3) Post cleanup. Discard respirator and cartridges (or disposable masks), coveralls, gloves and cleaned-up material into an impermeable plastic bag, seal it and properly dispose of the bag.

c. Rodent Control

- (1) Seal electric conduit trenches and raceways into control buildings and/or outdoor electrical equipment cabinets with duct seal, expandable foam, and/or similar products if compatible. Seal any other openings with a diameter greater than one-quarter inch, such as doorjamb, with a silicone sealant.
- (2) Dispose of all trash and/or food waste the same day it is generated and in an appropriate sealed trash container to discourage rodent activity.
- (3) Elevate materials and supplies 6 inches off the floor and away from walls to enable cleaning without having to physically move items.
- (4) Use continuous trapping efforts. Anticoagulant poison baits are recommended to control rodent populations, however, apply single-dose zinc phosphide poisons every 6-12 months to kill those rodents that have developed a resistance to anticoagulants. See your Environmental representative for a list of rodenticides that have been registered for use in controlling rodents.

ATTACHMENT 1
Page 1 (and 2)

CONTRACTOR REQUIREMENTS DOCUMENT

WAPA O 440.1, OCCUPATIONAL SAFETY AND HEALTH PROGRAM

The contractor shall comply with applicable 29 CFR 1910 General Industry or 29 CFR 1926 Constructions standards, and this directive. Additionally, the contractor shall implement a motor vehicle safety program to protect the safety and health of all drivers and passengers in Government-owned or -leased motor vehicles and powered industrial equipment including minimum licensing requirements and requirements for the use of seat belts and provisions of other safety devices. Compliance will be to the extent set forth in the contract.